SOAP

SEPTEMBER 1937

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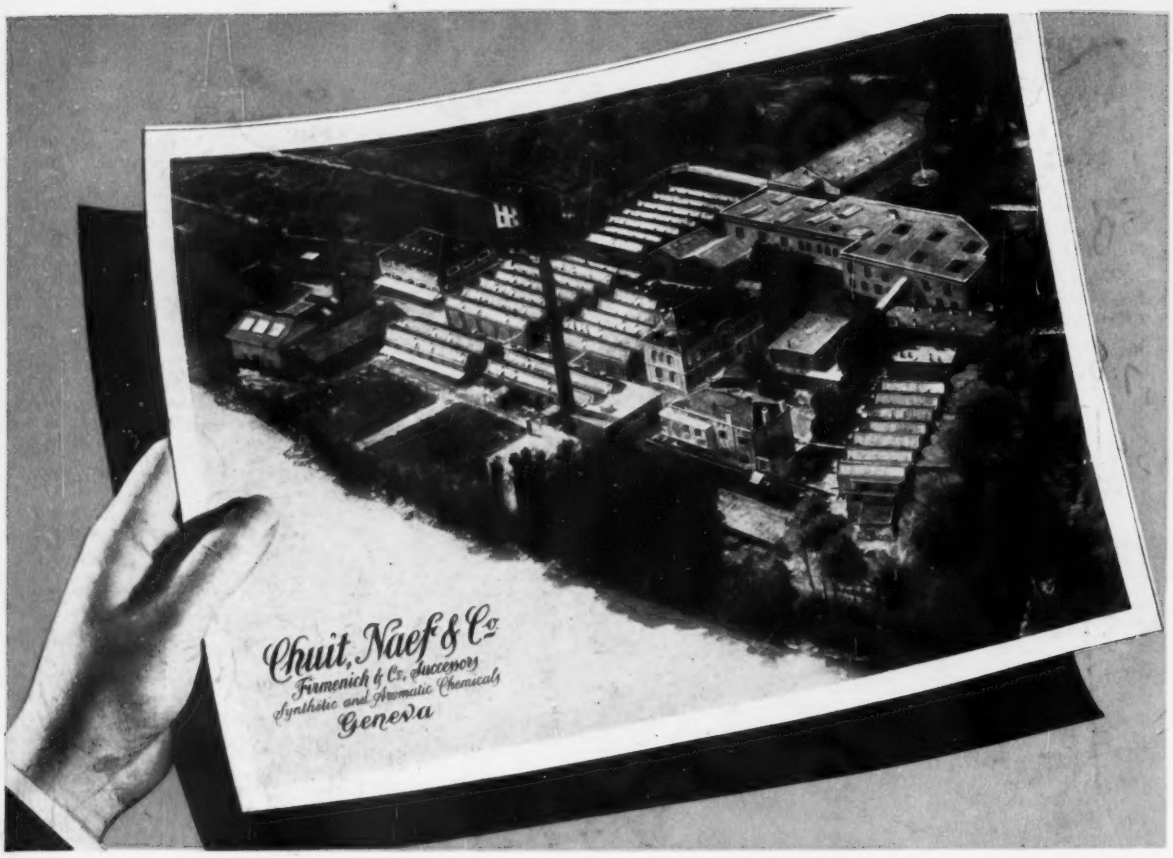

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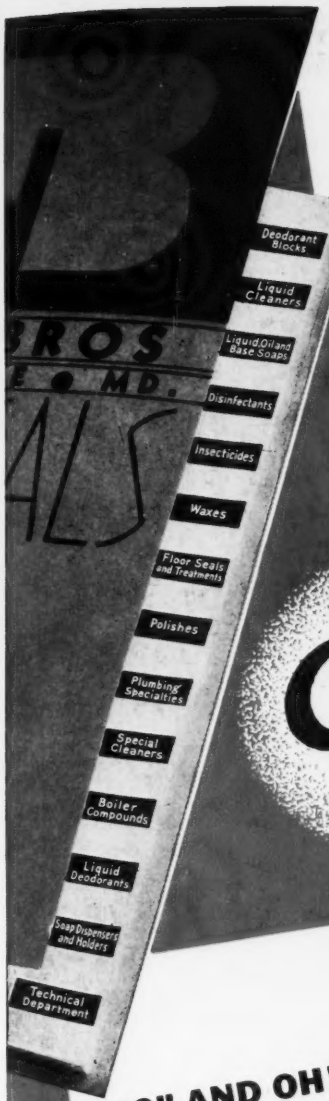

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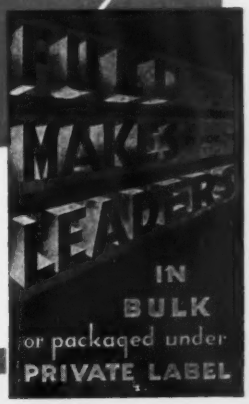

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Crude Tallol is one of these new materials and will be available for a number of years at prices that Soap Makers cannot afford to overlook. This product is fully described in an article by James A. Wallach which appeared in the March, 1937, issue of SOAP.

We are producing both Crude (Liqro) and Refined (Indusoil) Tallol at Covington, Virginia, and in the very near future additional quantities of the Crude will be available from our new plant at Charleston, South Carolina.

Samples, prices and detailed data upon request.

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DIVISION OF WEST VIRGINIA PULP & PAPER CO.

230 PARK AVENUE, NEW YORK CITY

SOAP

Volume XIII
Number 9

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September, 1937

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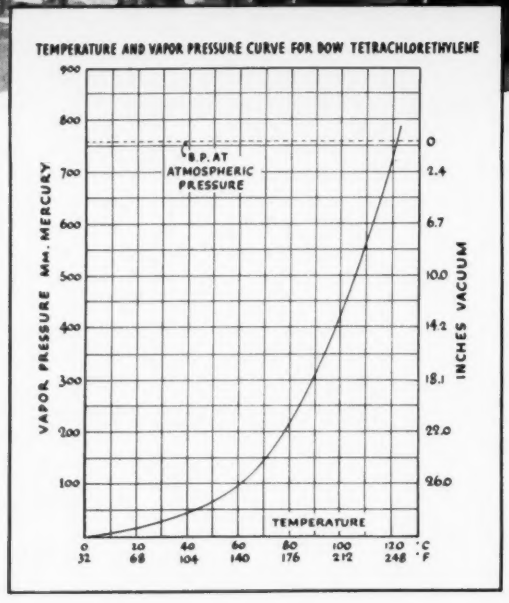

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send for your sample at once

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A Dutch Colonial Mansion or a Cape Cod Cottage both have for their end and aim shelter, comfort and happy living. Similarly, each cap above is unlike its neighbor yet all have the same objective—protection to the product, efficiency, attractiveness and convenience. By different routes they achieve those results, for each has been specifically developed to meet the naturally divergent requirements of different products, different sealing methods, different package ideas and different pocketbook needs. Hence, there's a real advantage—to you—in coming to Anchor for your closure requirements, where you can get unlimited choice and frank, impartial advice. ANCHOR CAP & CLOSURE CORPORATION, Long Island City, New York; Toronto, Canada. Branch offices in all principal cities.

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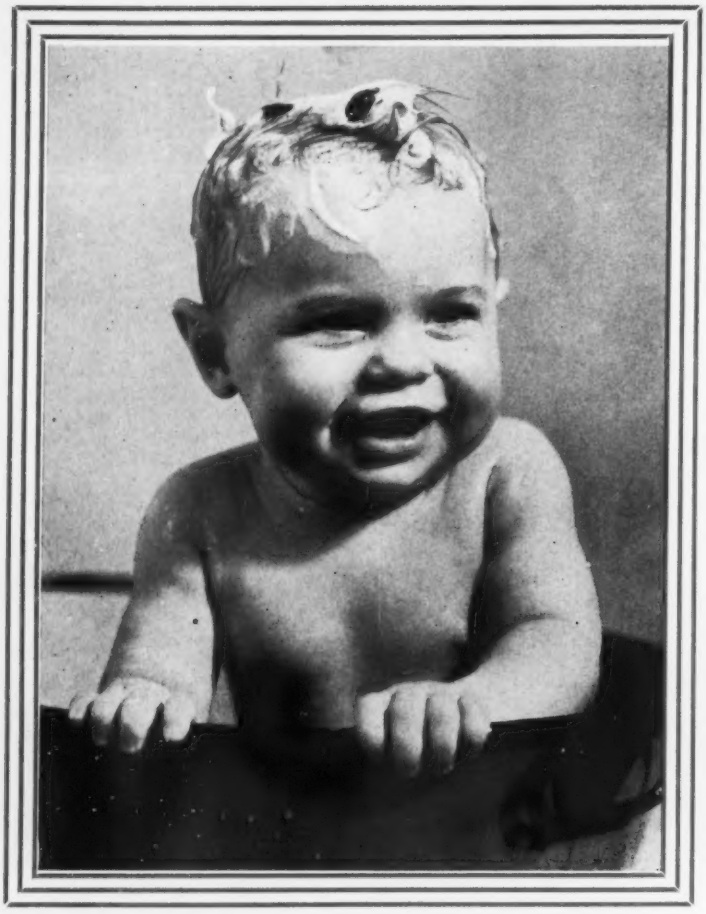

That Bath MUST DO MORE THAN CLEANSE

VITAMIN F PROGRESS

The Illinois Medical Journal, June, 1937, in an article by M. L. Weinstein, M.D., and Kathryn Glennon, Ph.G., titled "Vitamin F Ointments," states that "the physician will see many more individuals showing symptoms that can be attributed to vitamin F deficiency than he will see individuals showing equally outspoken symptoms attributable to all other vitamin deficiencies combined."

Symptoms of vitamin F deficiency are indicated by the authors to be "Dryness of the skin, eventuating in eczema; brittle, lustreless hair filled with dandruff; tendency to falling hair; and brittle fingernails."

Based on their wide experience at the Chicago Memorial Hospital, authors Weinstein and Glennon point out that "Vitamin F, unlike other vitamins, with the possible exception of vitamin E, operates well if applied externally—and equally well if administered internally."

The function of a good soap, today, does not stop with cleansing—there is also the important second duty of leaving the skin softened, refreshed, revitalized. With the recognition of the close relationship between vitamin F and skin health, has come a steadily growing use of this essential vitamin in soaps. Vitamin F is not only being widely used for maintaining skin health, but it is also being indicated clinically for the treatment of such vitamin F deficiency conditions as skin dryness, fingernail brittleness, and split, falling hair. Play safe—include skin-conditioning vitamin F in your soaps.

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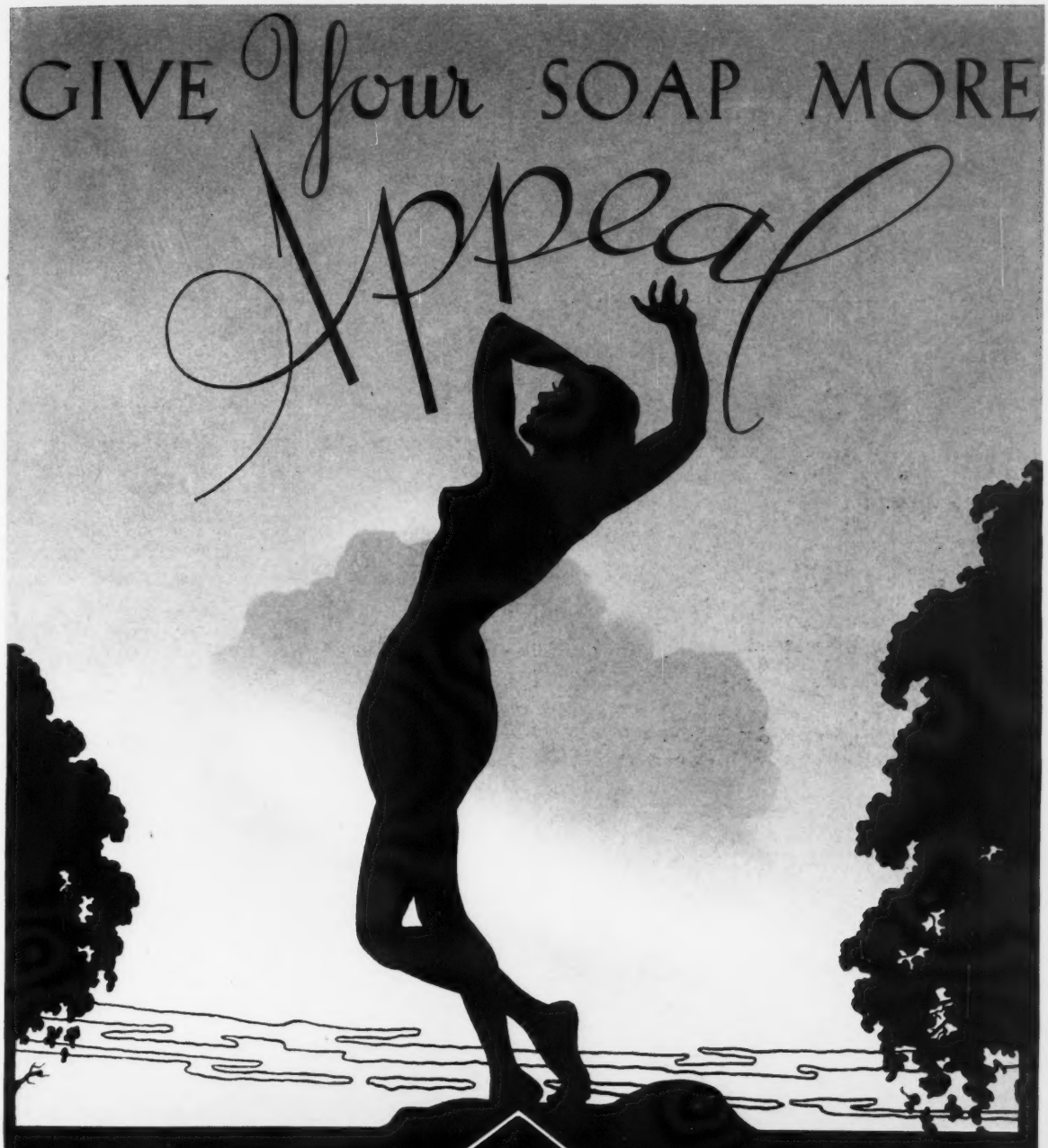
Please send me a copy of the article "Vitamin F Ointments," by M. L. Weinstein, M.D., and Kathryn Glennon Ph.G., as reprinted from the June, 1937 issue of the Illinois Medical Journal. It is understood that there is no cost or obligation.

Individual .....

Firm .....

Address .....



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There is only one odor, however, with a maximum amount of appeal to all . . . one odor for each type of soap you make. Other odors may approximate in sales appeal but only one can be the best.

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GENERAL DRUG COMPANY

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See this NEW "CIRENE" LIQUID FLOOR WAX ..make the Test yourself!

IMPERVIOUS TO MOISTURE
Within a few minutes after drying

• Dries in 10 to 20 minutes to produce a smooth, hard, lustrous finish • Recommended for use in Restaurants, Soda Fountains, Bars, etc. • May be cleaned with damp mop •

In applying "Cirene" Liquid Floor Wax, a thin economical coat should be flowed on, covering the surface without rubbing it. It smooths itself. Cirene should be applied with a cloth or, preferably, a wool applicator.

Immediately upon drying, which takes from 10 to 20 minutes only, "Cirene" is impervious to moisture, as illustrated by this test showing how the finish repels water.

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The features of "Cirene" open up a broader market for the sale of lustrous drying liquid floor wax—meeting the needs of many users.

It is made for use on all types of floors including rubber, wood, linoleum, rubber tile, asphalt tile, mastic, terazzo and cement.

With a wool applicator, apply a thin coat of CIRENE Liquid Floor Wax—It dries to a smooth, hard, lustrous finish without polishing. The appearance of the floor is easily maintained by sweeping or dry mopping. It can be *cleaned with a damp mop* when necessary, without dulling the finish.

CIRENE is also a perfect emulsion that will not settle out during storage, and is furnished in packages ranging from one gallon cans to fifty-five gallon drums.

Mail coupon below—we'll send samples and prices.

SEND FOR FREE SAMPLE

"CIRENE"
Dries to a Lustre
LIQUID FLOOR WAX
(AMMONIA TYPE)

THE DAVIES-YOUNG SOAP CO., Dayton, O.

Please send Sample Can and Quote Prices of "CIRENE"—*(Ammonia Type)* Liquid Floor Wax.

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The Blank Soap Company Doesn't Care a Hoot About The Zooming Price of OIL CITRONELLA

THE Blank Soap Company should be concerned with the jump in Oil Citronella prices.

Fact is, they don't care a hoot about booming Citronella prices because they've found a way to beat the price rise, not temporarily but permanently.

Like many other former users of Oil Citronella, the Blank Soap Company has discovered that the use of Citronella substitutes, Andro M M & R (Ceylon) and Jerale M M & R (Java), according to specified instructions by M M & R Chemists is the ideal way to get around Citronella price fluctuations without sacrificing product quality.

Tests of Andro and Jerale samples will prove to you as they did to the Blank Soap Company that these two unusually efficient, uniform, highly dependable substitutes are equal in pungency to the best Citronella Oil. Examination will show that Andro (Ceylon type) and Jerale (Java type) offer several advantages over Oil Citronella when used as suggested.

Write today for testing samples.

ALSO

Bergamot Synthetic — *Perfume Oil 413* — *Lemon Imitation for Soaps*

MAGNUS, MABEE & REYNARD, INC.

QUALITY ESSENTIAL OIL , BALSAMS AROMATIC CHEMICALS, ETC...SINCE 1895

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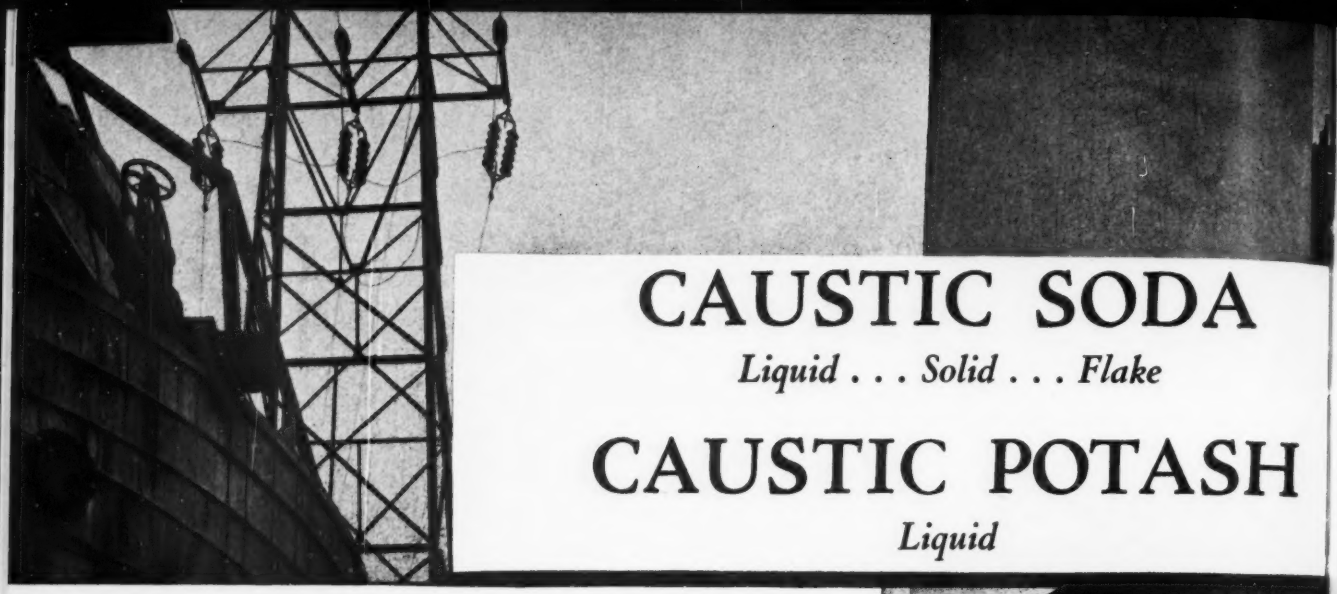

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Liquid . . . Solid . . . Flake

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Liquid

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"EARLIEST PRODUCTION IN THIS COUNTRY"

TRI-SODIUM PHOSPHATE
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ALSO MIXED DETERGENTS COMPOUNDED
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(Neutral Pyro)

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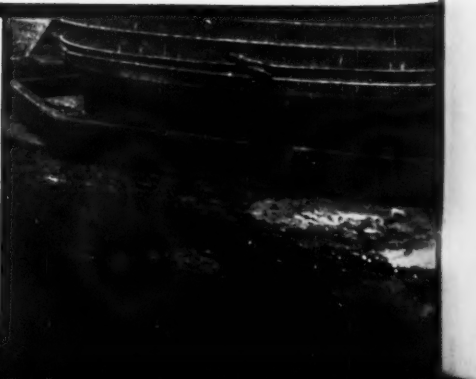

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for the

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Our own extensive perfume laboratory works closely with the Roure-Bertrand and Dupont laboratories abroad. Experience gained through the years with Europe's perfume industry, coupled with a definite knowledge of American requirements, combine to produce the ultimate in perfume odors for any purpose. A wide range of modern perfumes is available, priced to suit almost any requirement. For example:

Carnation	105	Lavandone	105
Dahlia	105	Orchid	105
Gardenia	105	Rosenone	105
Jasmin	105	Tuberose	105

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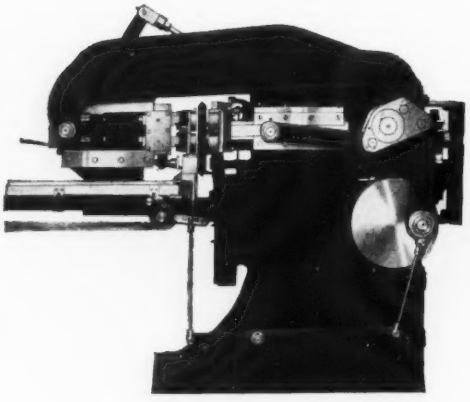
Soap pressing

1937 Style—

. . . with JONES PRESSES

ARE you pressing your soap 1937 style with a new JONES Toggle Operated SOAP PRESS . . . or are you still using obsolete models which are costly to operate and turn out poor looking soap?



Type K. Laundry Soap Press

. . . take a look at the new double toggle JONES Laundry and Toilet Soap PRESS shown here . . . in duplex type, 250 cakes of toilet soap per minute . . . in simplex type, 90 to 140 bars of laundry soap per minute . . . a long dwell of the dies on the soap, giving perfect pressing and long life for dies . . . with other greater economies of operation than older models . . . fed and run to capacity by one operator . . . no vibration . . . Zerk oilers throughout . . .

. . . every one a sound reason why you should figure now on replacing your obsolete models with the new toggle type JONES PRESSES.

R. A. JONES & COMPANY, Inc.

P. O. Box 485 **Cincinnati, Ohio**

The Standardized *Constant Motion Cartoner* packages, bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds, and inserts direction sheets and corrugated board liners with the loads.

As the editor sees it....

STOCKS of fats and oils available for the soap kettle are going to be larger during the latter part of the year, according to an analysis of the market situation recently compiled by the Bureau of Agricultural Economics of the U. S. Department of Agriculture. An increase in the production of cotton oil and other domestic vegetable oils is predicted, the prediction being based on anticipation of bumper crops. A slight drop in tallow production is looked for during the latter half of 1937, although the total for the year is expected to be well ahead of 1936. Better supplies of coconut oil will be available, it is held, while stocks of other foreign oils suitable for import will be larger.

The general tone of the report reflects a bearish attitude,—fat stocks augmented by slight increases in production here and there, and increases in imports, all contributing to a larger total,—and in this respect, it agrees with most of the opinions expressed by soapers and oil traders. Only in the case of coconut, do opinions differ, and the trend of opinion toward the easier side of the market appears to be growing.

RECORD earnings for the first half of 1937 were reported by two of the largest American soap companies. Also a marked increase in soap sales was reported for the same period. These reports are in sharp contrast to some which have come from smaller soap manufacturing organizations. Although sales and shipments of soap products by the industry as a whole were large for the first six months of the year, reported margins of profit did not approach those of the larger firms. As far as we can determine, the profit margin throughout the industry was just about proportional to the size of the various companies. Inasmuch as stocks of oils and fats in the hands of soapers ordinarily vary in proportion to the size of the firms, we are inclined to suspect that these large profits are more the results of appreciation in fat and oil inventories than they are the result of soapmaking operations.

That adequate stocks of lower cost oils and fats during the rising prices of the first half of 1937 gave large soapers a tremendous advantage over the smaller firms, was quite apparent. The firm which had to buy from hand-to-mouth, each purchase at a higher figure, was not in the best position to compete. To some extent, the large soapers took their competitive revenge for the reverse situation back in 1932 and 1933, when a steadily declining fat market left them holding the bag, and gave the small hand-to-mouth buyer every advantage.

NOT so long ago, when hearings were being held in Washington on the then proposed excise taxes on coconut, palm, and other oils, and later, on tallow, fatty acids, and the like, soapers were unanimous in predicting a sad future for the soap industry should these processing taxes become law. Some predicted ruin. Others merely nodded their bowed heads in resignation. The gloom throughout the industry was as thick as homemade pea soup. After interviewing soapers here and there, and being convinced that the future could be nothing but black, we returned to shed a few editorial tears of our own. We told the people in Washington who make our laws what we thought of them for putting a tax load on the soap industry which was going to break its back.

And now come these two earnings reports, showing record-breaking sales and profits for the first half of the year. What will the people in Washington think? Should we try to explain that these two companies probably had large stocks of oils on hand in a rising market,—as mentioned before,—or should we just hope that people will forget what we said? Most of those gloomy predictions on the part of soapers were merely verbal predictions, easily forgotten. But our laments stand engraved in the printed record where all may view,—and if they feel in the mood, exhibit side-by-side with the two earning reports recently issued. And maybe some folks in Washington will think that if soapers can make so much money with a three-cent excise tax,—how about making the tax five cents? This may sound silly right now with Congress having just gone home to cool off, but experience proves that legislative minds have a habit of functioning in such a fashion.

RECENTLY a large dentifrice manufacturer adopted a fatty alcohol derivative as the detergent ingredient of his tooth paste. Previously, no soap or other detergent had been used. In fact, the manufacturer advertised that his product contained no soap. Whether this was supposed to be a point in its favor or not, we do not know, but we judge that it was. Now, apparently of a mind that his dentifrice needed some detergent ingredient one has been added. The manufacturer can still look the world in the eye, and honestly say that his dentifrice contains no soap, which he has not failed to do. However, the product has got to be a lot better than it was before the detergent was added, because to our way of thinking, the original item was far from good.

As to the general subject of soap in dentifrices,—if any soap should be used, and what kind of soap,—castile, coco-tallow, palm,—this topic is discussed at some length elsewhere in this issue. In view of the no-soap claims of a few dentifrice manufacturers, and the use of one kind of soap or another by the majority of manufacturers,—not to mention the controversy between suppliers of different types of powdered soaps,—the discussion presents some rather interesting angles of the situation.

FROM the advertising pages of a large daily newspaper, we have extracted another gem. The advertisement in question was for "Milk of Magnesia Cleansing Soap." The part of the advertisement which brought a faint blush to our sallow cheeks was the following statement: "A soap with greater cleansing power because it not only removes dirt but the milk of magnesia aids in neutralizing the fatty acid secretions of the skin."

The advertising man who contributed this scientific masterpiece to the art of soap selling most certainly should receive some kind of recognition from the soap industry. His ingenuity should be rewarded. We suggest that the reward be something in the form of a nicely bound volume on the history and work of the Federal Trade Commission.

INDUSTRIAL accidents in the soap industry for 1936 showed a fifteen per cent drop in frequency compared with 1935, but a thirty-seven per cent increase in severity, according to figures recently issued by the *National Safety Council*. For a total of 11,765 plant employees, the soap industry reported 317 accidents of all kinds in 1936. However, not a man was killed or totally permanently disabled. The great majority of accidents, 296, were of a temporary disabling character only. All told, something over 17,000 working hours were lost as a result of accidents.

Considering the nature of soap manufacture and the materials handled, and comparing with other chemical process industries, the record of the soap industry is good, and distinctly a credit to its safety engineers and its workers. The most gratifying feature of the 1936 figures is the sharp drop in the frequency rate of accidents. It is sincerely hoped that this year will show a further decline.

What Soap for DENTIFRICES?

TO a great extent, the civil war in Spain for the past year has been responsible for precipitating something akin to a controversy in the United States on the subject of dentifrices and more particularly, the soap content of dentifrices. As might be expected, the hook-up of the Spanish war and American dentifrices had to do primarily with castile soap which has been used for many years as the detergent ingredient of tooth pastes and tooth powders. Spain, being a supplier of olive oil and castile soap along with Italy, Greece, France, and some other countries, was naturally just about removed from the market as a shipper of these items by the intense internal struggle. Those who had been supplying Spanish olive oil and castile soap to the American trade, found themselves unable to take care of the demand. The price of all olive oils and castile soaps rose rapidly because of this situation.

With the rise in prices for castile soaps,—all castiles, whether of Italian, French, domestic or other origin,—large American users, of which the dentifrice people represent a very considerable proportion, began to worry about being able to secure adequate supplies at a reasonable price. At this point, the domestic producers of other soaps which are competitive with castile for this business, stepped in to make use of a market situation and turn it to their own advantage. — which naturally, has been the custom down through the ages among manufacturers of competitive products. The American producers of powdered soaps, chiefly the tallow-coconut oil variety which is commonly known as white neutral, made a determined bid to switch those who were using castile over to white neutral or some other type of domestic powdered soap. They maintained that white neutral, *et al*, were superior to castile and also laid great emphasis on the scarcity of castile,—or the potential scarcity,—and pointed to the civil war in Spain. They also told the American user of powdered castile that he should not permit one of his important basic materials to rest on the vagaries and uncertainties of the economic and political situations in

France, Italy, and Spain. That they made a very strong impression on many buyers of powdered castile soaps was confirmed by discussing the subject with these buyers.

As the recipients of a broadside from the makers of white neutral powdered soaps, the castile people were not at all backward in returning the fire. First of all, the controversy hinged on the claim that there was a scarcity of castile soap because of the Spanish situation. The white-neutral suppliers stated that castile was short and was going to get shorter. The castile suppliers replied that there were ample stocks and that they could take care of any demand very nicely. The white neutral makers then pointed to the price of castile and suggested that it was too high and that buyers would do much better if they would buy white-neutral at a lower price.

This type of argument, covering the subjects of supplies, prices, and costs, was the first phase of the argument. From this, the discussion soon spread to the general subject of castile soap versus white-neutral and other soaps for dentifrices, cosmetics, pharmaceutical products, and the like, —and the relative merits of the two types of products. The Spanish crisis, the original cause of the controversy, was soon forgotten in the general issuing of statements on the subject. That the whole argument was confusing to buyers, was quite apparent. That each supplier was most deeply interested in putting forward the points of superiority of his product, —and conveniently forgetting the weak spots,—was also quite obvious. For after all, it is only good sense to believe that the people are in business to sell soap and that they are not going to be so wonderfully fair-minded as to tell all the facts,—both good and bad,—about their goods. Therefore, a number of the leading suppliers of both types of soap were asked by SOAP to give their views on the subject, in the hope that all sides of the subject might be presented in condensed form in one place. Their statements are given in the following columns.

BEFORE going into the whys and wherefores of the different powdered soaps for dentifrices, the composition of the soaps commonly sold is worth a short comment. First of all, the various forms of powdered soaps represent the purest form in which soap is available commercially today. They run from 97 up to 99 per cent in some cases of anhydrous soap. Castile powder is a pure olive oil soap from which the moisture has been expelled and which is milled to a powder of varying degrees of fineness. White neutral powdered soap is a soap made from edible tallow and coconut oil in varying proportions, usually 80 tallow and 20 coconut. There are also straight coconut oil powdered soaps and straight palm oil powders on the market, as well as an occasional mixture of palm oil with some other oil or fat. However, the two leading soaps, and those about which the powdered soap controversy revolves, are castile and white neutral.

Inasmuch as the main use for powdered soaps is in dentifrices, it is interesting to take note of a recent U. S. Government Specification (FFF-D-191) issued for tooth paste. Under the heading of composition, this specification calls for the usual mild abrasives such as calcium carbonate, tricalcium phosphate, etc., and then states that the following detergents, flavors, and preservatives are limited in their use,—if used,—as follows: Soap, hard or soft, U.S.P. XI, not over 20 per cent. Of course, most tooth pastes use far less soap than this, so the amount is not material. The point is that the soap must meet the U.S.P. XI requirements, and although the name "castile soap" was dropped in the U.S.P. XI, the specifications for the soap virtually call for an olive oil soap.

Another interesting angle of this dentifrice-soap controversy, is the inroads which some of the newer non-soap detergents are reported to be making in certain quarters in the U. S. and in England. These detergents are mostly patented wetting agents of various types. The maker of a leading American dentifrice has just recently announced his adoption of sodium lauryl sulfate. Previously no soap or other detergent was used. The chief claim for them is that they are effective detergents and do not have the drawback of a soapy taste. This is also the claim of those dentifrices which use neither soap nor a detergent. However, with a few exceptions, the leading dentifrices of the country use one type of soap or another.

The statements of the various suppliers of castile and other soaps are given in the following:

Charles L. Huisking, president, Conti Products Corp. — "Since the primary object of introducing soap into the formula of a dentifrice is to enhance its cleansing action, the use of true olive oil castile is ideal in this connection. Sodium oleate being its main chemical constituent, it is particularly adapted, because at the temperature conditions existing in the mouth, its detergent powers are far superior to that of any other type soap. This contention is corroborated by the works of such prominent investigators in the field of colloid chemistry, as Hillyer, McBain, and Fischer.

"Hillyer has shown that soap from olive oil (castile soap) has a remarkably high emulsifying power compared with other soaps, as measured with a Donnan pipette. The work of McBain and others on the conditions prevailing in aqueous solution indicates that the increased emulsifying effect of oleate soaps over others, such as palmitates or stearates, is dependent primarily on the fact that with the oleate soaps, the formation of hydrophilic ionic miscelles persists into unusually low concentrations. Therefore, at low temperatures or a body temperature, with olive oil soap, more of the 'dissolved' soap is in effective colloidal state than occurs under similar conditions with other types. Fischer in his well-known book entitled 'Soaps and Proteins' on page 151 states—'Those soaps are best emulsifying agents which at the temperature of

their use and in the presence of water yield essentially liquid systems of the type, water-dissolved-in-soap. For this reason the oleates, linoleates, etc. are, of all the soaps studied, the best emulsifiers at ordinary temperatures, because, besides having high hydration values, they are liquid.'

"Since the detergent properties of a soap are very closely correlated with its colloidal and emulsifying properties, it naturally follows from the above, that a soap such as castile, which is made entirely from olive oil should be more efficient in its cleansing action than other type soaps made from tallow, lard, or any other animal fat, and which are very high in sodium stearate or sodium palmitate content. All this means that an excellent dentifrice can be prepared with a minimum proportion of soap required when true castile is used. The use of any other type soap necessitates employing a larger proportion of it in the formula, which may not be desirable not only from an economy standpoint, but may be of serious detriment to the finished product itself, because of the necessity of having to use excessive amounts of strong flavored essential oils in order to cover up the larger amount of soap required in the formula.

"True castile soap has long had the reputation of being not only efficient but very mild. In solution, it evidently is less hydrolized than the soaps of this saturated fatty acids, and therefore its solutions are less alkaline. Castile soap, being made entirely from olive oil consists largely of sodium oleate, oleic acid constituting approximately 90 per cent of the fatty acid content of olive oil. Oleic acid is an unsaturated acid; lauric, (occurring in coconut oil), palmitic and stearic acids found in large proportion in fatty acids derived from other common soaps, are saturated. In general, unsaturated acids are stronger than the corresponding saturated acids, the unsaturated acid having a greater dissociation constant than the corresponding saturated acid. Hence, the degree of hydrolysis manifested by the salt of an unsaturated acid should be less than that of the salt of a saturated acid, and the solution of the former should be less alkaline. This undoubtedly explains the milder action of castile on coming in contact with mucuous membranes and is surely a very good reason why it has come into great favor and use by many large pharmaceutical manufacturers.

"Castile soap will be found to be by far the least unpleasant tasting. This is most likely explained by its comparatively low degree of hydrolysis in aqueous solutions and constitures a very important consideration. Because of its extremely mild taste, it is not necessary to load the product with pungent flavored essential oils, which aside from being expensive, are not always desirable both from a psychological and aesthetic point of view. Castile soap permits the use of the more delicately flavored essential oils, thereby imparting to the finished product an air of quality and dignity, and adding considerably to its sales appeal."

John Powell, of John Powell & Co. — "The steadily increasing substitution of white neutral soaps and palm oil soaps in place of olive oil soaps by manufacturers of dentifrices indicates that these manufacturers in most instances recognize the superiority of the former. With wide improvement in quality of white neutral powdered soaps over the past few years, as a result of better selection of raw materials and improved methods of manufacture, the increased popularity of this type of soap is not difficult to understand.

"In their recent book, '*Modern Soap Making*,' Thomsen and Kemp, the authors, give an outline in table form on Page 229 which sets down the physical and chemical characteristics of powdered castile soap and powdered white neutral soap for use in tooth powders, tooth pastes, cosmetics and pharmaceuticals. It is unfortunate that in compiling this table they did not include powdered palm oil soaps, which also have found considerable favor in this field.

"From this table, which undoubtedly represents an impartial opinion, castile soap is stated to be superior to neutral white soap in but two respects,—taste and solubility. Even the advantages of these two properties are open to dispute for it is questionable whether they are desirable for all purposes to which these soaps are put. With manufacturing refinements and the use of pure raw materials, the taste of neutral white soap has been made so bland that it is considered by many observers to be superior to castile soap, especially that which has been in storage for a period of months. Palm oil soaps are certainly superior in taste to castile soaps, having a fine, sweet-like, nutty flavor when properly made from purified, high-grade palm oil. It can be said with little chance of dispute that palm oil soap is better in flavor or taste than either castile or neutral white soap.

"The disadvantages of castile soaps in addition to their high cost are quite evident. Olive oil soaps have very poor lathering power, are very apt to become rancid and turn yellow, in fact the rate of rancidity proceeds so rapidly in certain cases that the soaps in powdered form actually take fire and burn. This susceptibility to rancidity is quite evident when one considers the high percentage of unsaturated fatty acids present as indicated by its large iodine number. This lies between 84 and 90. Neutral white soaps have approximately one-half the iodine number or unsaturated fatty acid content of olive oil or so-called castile soaps being only 34 to 40. Palm oil contains a high percentage of palmitic acid and also has a much lower iodine number than castile soap. This usually runs between 51 and 57. Palm oil soap powders are, therefore, finding increasing favor in cases where taste is a primary consideration as is the case in tooth pastes and powders.

"Their resistance to rancidity, their better lathering quality, their

higher congealing power, or power to form a jell in water, and their greater purity recommend neutral white soaps and palm oil soaps over castile soap for use in making cosmetic creams, dentifrices and lotions.

"There is just one other point which should be touched on and that is the fact that the term 'castile' is a very flexible one. Soaps sold as castile soaps are not necessarily made from pure olive oil. They vary in composition considerably and are not uniform. Olive oil also as it comes into the market varies greatly in quality. In many cases adulterants are added to prevent its diversion to edible channels. These adulterants carry through to the finished soap and are often detrimental to other products in which the soap is used. In making castile soap, the cold-process is often used. This means improper saponification and in order to prevent rancidity and increased hardness of such soaps, a high percentage of salt is deliberately added. Neutral white and palm oil soaps are made by the full-boiled-settled-process which assures thorough saponification, removal of impurities and greater uniformity of the soap base before it is pulverized."

Herbert Kranich, president, Kranich Soap Co.—"First of all, consumer acceptance is what determines the make-up of any product. If a product of a definite composition has had consumer acceptance for many years, that composition must be basically sound. In this respect, it might be mentioned that toothpastes and powders containing soap still outsell all the rest. The reason is psychological, as I see it,—the user wants a lather, not only for his hands and face, but also when he cleans his teeth. And the soap does have a definite cleansing action both on the teeth and the brush.

"Now the question is, what kind of soap? Castile, coco-castile, coco pure, coco-tallow, palm, or what? Here again the problem of specification versus cost and manipulation. An ideal soap would be one of high lather, low titre, low pH, minimum hydrolysis, maximum stability, odorless, tasteless, free-flowing, pure white, and low cost,—one that will form a firm gel, but not rigid, and is neutral in that there is no unsaponified matter present, with minimum unsaponifiable, alcohol impurities less than one per cent. Why an all-soda soap? Why not a small amount of potash soap to impart higher solubility and free rinsing from the mouth? Maybe it is something to think about.

"As to definite suggestions,—castile is an ideal soap for use in the human mouth, but it lacks lather. Straight coconut oil powder is too sharp except when used in small amounts in powders with a high bicarbonate or chalk content. Palm oil, alcoholic type, is as in the case of the tallow-coco (white neutral), too high in titre, too low in solubility, and subject to too wide price fluctuations. These latter also have the drawback of requiring much higher content of flavoring materials to overcome their taste.

"You have asked for definite suggestions as to the ideal soap for use in a dentifrice. The following is my idea on this subject, a mixture of three powders: Castile powder, U.S.P. (or other low titre powdered soap of similar specifications), 80 per cent; Coconut oil powdered soap, 10 per cent; castor oil powdered soap, 10 per cent. The castor oil soap has a very definite function which is to aid solubility, rinsability, lathering, and to reduce hydrolysis. The straight coconut powder builds up the lather which is lacking in the castile soap.

"There is no doubt but that the ideal soap for use in a dentifrice is neither a straight castile powder nor a straight white neutral powder, but a mixture of various powders aimed to overcome the shortcomings of each type and to take advantage of the good features of each type. Custom and habit appear to have kept the dentifrice manufacturers from experimenting along the lines of blended powders made from individual soaps of very high purity. This seems to be a line along which future investigations might well be made.

"As for the use of soap or no soap,—or soap or a non-soap detergent,—we believe that a soap of proper composition is still the ideal detergent ingredient for the modern dentifrice."

T. R. Lockwood, vice-president, Laco Products, Inc.—"It is an accepted fact that all soaps carry distinguishing characteristics and properties traceable to the exact fatty materials from which they are made. It is equally true that no other fat material employed in soap making has been in any way as widely endorsed and highly publicized for its known beneficial values as has olive oil. Countless soap products are widely publicized without true indication of the fat material employed and without uniformity of formula.

"The numerous grades of olive oil permit of varying results in the quality of finish and grades of products. Soaps made from heat-treated olive oils may not be expected to have the characteristics of a high class olive oil soap made from a good grade of cold pressed olive oil. Again, olive oil foots extracted by heat and powerful solvents present another problem and a soap with still different characteristics.

"Most of the difficulties encountered by industrial users of castile soap have been incurred through the purchase of lower priced soaps in which off-grades of oil have been used, giving necessarily poorer results than the idealistic white, pure olive oil, genuine castile soap made from a good grade of cold pressed olive oil.

"As a detergent and emulsifier olive oil soap retains its high post. When a carefully balanced soap is produced no more gentle product, helpful to human skin or tissue, has been marketed. On the contrary, numerous oils other than olive oil

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. . . for COSMETIC EFFECTS in Soaps

Lecithin, cholesterin, lanolin, and derivatives of these and higher fatty alcohols . . . as antioxidant, superfatting and cosmetic agents

By Margaret J. Hausman*

INTEREST in materials to be added to toilet soaps for the production of cosmetic effects has been unusually keen of late. Undoubtedly considerable research of comparatively recent beginnings is being carried on right now along these lines. Numerous advertising claims for cosmetic properties for soaps, many of which have had little or no basis of fact,—and the severe criticism which has been levelled at some of these claims,—and not to mention the food-and-drug legislative activities in Washington during the past year,—probably account for a recent sharpening of interest and the stimulation of research activities. Prominent among the materials being investigated are lecithin and other phosphatides, lanolin, lanolin derivatives, and other superfatting agents, and derivatives and combinations of the higher fatty alcohols. The properties of some of these materials, including also their antioxidant effects, and their possible wider uses in toilet soaps, present an interesting study.

Chiefly for its emulsifying action, its adsorbing properties, and its value as an antioxidant, lecithin has established for itself a secure niche in modern industry. Its uses extend over the fields of food, soap, cosmetic, medicinal, and other preparations. Lecithin belongs chemically to the phosphatide or phospholipin family, being composed of fat-like material containing phosphorus. It is now recognized as the choline ester of phosphatidic acid, a triglyceride with phosphoric acid in the place of one fatty acid group. It is difficult to investigate the structure of phosphatides since they are very unstable compounds, being autooxidizable and intersoluble. The assumed composition of lecithin is based on study of its hydrolytic products. Glycerophosphoric acid, fatty acids, and choline result from the hydrolysis of lecithin.

It is reported that complex fatty compounds were discovered shortly before the beginning of the nineteenth century, while phosphorus-containing fats were believed to have been isolated for the first time in 1812. These substances were derived from brain matter. After this time heterogeneous phosphatidic materials were prepared. In 1850 someone isolated a product resembling this group from egg yolk and named it "lecithin" after the Greek word for egg yolk. At the same time it was demonstrated that glycerophosphoric acid, as well as fatty acids and nitrogen, is present in lecithin.

There are, at present, three types of lecithin on the market.—brain, egg, and plant lecithin. In general, egg and brain lecithins have always been preferred, but, recently, with rapid progress in the soybean industry, plant lecithins are coming into their own as highly desirable products. It has been claimed that the latter are often lighter in color than the other types, cheaper, and more resistant to oxidation. Egg lecithin is prepared from imported dried egg yolks, produced in China and elsewhere. Dried egg yolks contain about ten per cent of lecithin. Brain lecithin is sometimes distinguished from ordinary lecithin and spoken of as cephalin. The chief distinguishing features between these two phosphatides is their solubility. Lecithin is soluble in alcohol and ether, but insoluble in acetone, whereas cephalin is soluble in ether but not in alcohol or acetone. It has often been claimed, however, that an absolute separation by this method cannot be obtained. A method involving precipitation of lecithin by means of cadmium chloride is recommended as the most efficient method for separating one from the other.

Experiments recently conducted with lecithin led to the conclusion that the antioxygenic agent in commercial lecithin preparations, which are actually mixtures of phospholipids, is cephalin. Traces of cephalin as impurities in the alcohol-soluble

* The death of Miss Hausman on June 30 after a brief illness was announced with regret in the last issue of SOAP.

portion of commercial lecithin apparently accounted for antioxidant behavior. This belief was based on the fact that absolutely pure lecithin prepared from the alcohol-soluble portion of commercial lecithin by a lengthy procedure, which included precipitation by cadmium chloride, was not effective at all as an antioxidant. According to authorities, pure cephalin has never been prepared. In the final analysis, the substance for antioxidant action is thought to be a phospholipid closely associated with cephalin, which has not yet been isolated. It has been quite definitely established that the mono-basic phosphoric acid radicle present in cephalin accounts for its antioxidant action, while the absence of a titratable acid group in lecithin accounts for its failure to behave in such a way. In the use of cephalin as an inhibitor of rancidity, it is interesting to note that there is no quantitative relation between the amount of cephalin used and the prolongation of the induction period.[1]

Phosphatides as a class are members of the lipoid family. Originally the term "lipoids," derived from the Greek term for fat, was introduced to signify all of the unsaponifiable substances that could be extracted from tissues by alcohol and ether. At the beginning of the twentieth century, the term was applied to cellular compounds soluble in organic solvents. Since that time, it has been used in a variety of senses, with no specific reference to any one type of material. Lipins are present in every cell of living organisms, and, therefore, they are believed to exert some action absolutely vital to life. A great deal of work has been done in an effort to prove that they are essential to breathing, but no definite proof has been found. This deduction is based on the ease with which phosphatides are oxidized, the reaction seeming to be reversible in cells. Even the mechanism of the oxidation process, however, has not, as yet, become definitely understood.

[1] "Antioxidants and the Autooxidation of Fats IV. H. S. Olcott and H. A. Mattill. *Oil & Soap*—13 (4)—(1936)—P. 100.

To the soap industry, phosphatides are important insofar as they increase the cleaning action of some types of soaps, especially superfatted soaps. From a cosmetic standpoint, they are considered valuable in soaps insofar as they resupply essential lipids which are continually washed away from the surface of the skin. Thus, they exercise a regenerative effect paralleling that of vitamin and hormone preparations. For the same reason, phosphatides are added to a number of skin creams. In addition to the direct benefits claimed for them, they also improve emulsification wherever used. In the direct preparation of emulsions, also, lecithin is important. Among patents issued for such emulsions is one for a product which can be added to soap and used in textile processing, produced by heating fresh bleached soybean residues, adding a solution of waterglass to the hot material.

One of the most important applications of phosphatides at the present time is in the manufacture of margarines, especially in Europe. It has been claimed that the presence of lecithin in butter accounts for many of its properties. Thus, when lecithin is added to butter substitutes, improved retention of moisture and salt is one of the most desired results. Furthermore, by effecting a more complete intersolubility of fats than would otherwise be the case, the addition of phosphatides to margarines imparts a smoother consistency and more pleasant taste. For the same reason, phosphatides have been found desirable in chocolate manufacture. The ability of phosphatides to hold water is thought possibly to be of significance in this respect. Everyday practice in baking applies the advantages of the properties of phosphatides, particularly lecithin. The use of eggs, butter, yeast, buttermilk, and other materials, is affected by the lecithin present.

Another member of the phosphatide family, better known, perhaps, and more widely used than lecithin, is cholesterin. Its behavior is similar to that of lecithin. While it is present in all animal cells, cholesterin is found chiefly in certain animal greases, the brain, spinal cord, and other complex organs. It was discovered in 1758, but not until 1814 was it established that it belonged to the class of unsaponifiable lipids. Chevreul proved this fact. Its formula is considered to be $C_{27}H46\ 0$, an unsaturated secondary alcohol. Cholesterol occurs in the body both in the free state and as an ester of higher fatty acids. Although its significance is recognized by its ubiquitous presence, its exact functions are unknown. It is generally believed, however, that both the forms in which cholesterol exists in the body serve absolutely distinct purposes. The free cholesterol is looked upon as acting as an essential constituent of the living structure of protoplasm. It is believed to neutralize the effects of a number of poisons such as saponin. The action of cholesterol in the ester form has been described as that of a transport agent in fat metabolism. It is strongly believed also that cholesterin forms the basis of the nervous tissues.

The chief advantage cholesterin possesses from a commercial standpoint is its emulsifying action. Its presence in fats increases their ability to absorb water, hence its widening application in emulsion creams. The use of lanolin is based chiefly on its cholesterol content. Only small amounts of free cholesterin are present in lanolin. It is made up, for the most part, of cholesterin esters.

Sulfonated cholesterol detergents are valuable in certain textile and leather industry operations. An example of their preparation is the following process, covered by a French patent. Cholesterol is esterified with boric acid and mixed with orthoboric ester of oleic alcohol at about 60° C. and the oil obtained is sulfonated with sulfuric acid.

Lanolin has been one of the most widely used superfatting agents in soap making. It consists chemically of a mixture of fatty acid salts of cholesterol. Although fatty in char-

acter, lanolin does not resemble ordinary fats in composition, fitting more closely into chemical classifications as a wax, than as a fat. It is readily absorbed by the skin and is used to soften and heal. Anhydrous lanolin, with an acid number under 0.3 per cent, and practically free of organic and inorganic impurities, is the grade usually employed for pharmaceutical and cosmetic purposes. It has been suggested that lanolin soaps should not be made with a high percentage of coconut oil fatty acids, which defeat the very purpose for which the lanolin is added, owing to their skin irritating character. The addition of five per cent of lanolin to toilet soaps is said not to diminish lathering power or stability to any substantial extent, or to introduce much odor. A smaller percentage is held to be ineffective.

Spermaceti, an animal wax derived from the head cavities and blubber of the sperm whale, is also worth mentioning in this connection. This material separates as a solid constituent from sperm oil, when the oil is left standing in the cold, and is removed from the oil by pressing. It is composed primarily of the cetyl ester of palmitic acid, and yields, when saponified with caustic alkali, cetyl alcohol. It also contains the lauryl, myristyl and stearyl esters of lauric, myristic, and stearic acids, and other esters. It is used mostly in the manufacture of cosmetic and pharmaceutical preparations, soaps, and candy, and as a sizing material.

Recently the higher molecular fatty alcohols have been attracting much attention for their value as additions to cosmetic and soap products. They increase the capacity for water retention in soaps, and at the same time improve grain and surface gloss. Soaps made with them are smooth, and are said to leave the skin or textiles washed with them smooth and soft. They are unaffected by the acidity, alkalinity or hardness of the wash waters. Furthermore, the use of fatty alcohols in soaps tends to reduce the danger of rancidity.

Methods have been patented for preparing an unusual type of superfatted soap by adding fatty alcohols containing anywhere from 8 to 20 carbon atoms to neutral or semi-finished soap stock and milling the soap as usual. This process can be varied in different ways. One such variation consists in hydrogenating liquid fats with suitable catalysts and pressures so that fatty alcohols are obtained. The mixture of fats and alcohols which results is then saponified. A superfatted soap which will not go rancid is obtained.

To give to any toilet soap genuine cosmetic properties is obviously a difficult problem, due principally to the manner in which the soap is used. To incorporate any cosmetic agent in a soap in sufficient quantity to give cosmetic effects first consideration, is usually to produce a soap which lacks the properties of a good soap. This has been one of the chief drawbacks to the use of various fatty substances and to petrolatum. Possibly the answer to the problem lies among the fatty alcohols and their derivatives, or in a combination of these with other superfatting agents. Nevertheless, in the final analysis, a superfatted soap or any soap designed for cosmetic effects,—and not alone for cleansing and the removal of dirt and grease on the surface of the skin,—in reality violates the purpose for which any soap is designed. A soap is not supposed to leave something on the skin. Its job is to remove the very type of material which a cosmetic adds to the skin. Probably this is why the average soap chemist considers a true cosmetic soap merely a dream of his advertising department.

Soap for Dentifrices

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have in themselves irritating qualities which are not lost on conversion of the soap.

"The same bland characteristics enable manufacturers to use a lesser quantity of expensive aromatics and preserve a more lasting flavor. Considered concretely, a perfectly made white olive oil soap made from cold pressed olive oil has the least taste, or the least disagreeable taste. The mysterious soap tastes from various lower cost fat ingredients cause more users to cease the purchase of dentifrices than many times their cost in publicity can offset.

"A perfectly made genuine white castile soap has perfect ageing properties, lacks foamy froth, mixes well and while inoffensive to the user covers an important cleansing and mildly antiseptic function."

F. H. Merrill, president, Los Angeles Soap Co.—"While we have not marketed any tooth pastes we have had considerable experience in experimenting with them and have come to the conclusion that olive oil soap alone will not do on account of its weak detergent properties. If the soap contains 25 per cent coconut oil the tooth paste does a much better job of cleaning. The only objection to it is the taste. This must be overcome by a suitable flavoring which is a problem in itself and in our opinion opens up a field for worthwhile investigation."

Refining Oils

In the process of refining oils with excess alkali and salt by heating with live steam for 1-2 hours according to Russian patent 38,721, practically all of the 20-25 per cent of oil retained in the soapstock emulsion can be recovered by adding 2.5-3 parts of 1-1.2 per cent of salt solution and heating the emulsion at 90-5°C. with stirring. The last traces of soap in the oil can be removed by repeated washings with 1 per cent salt solution. A. A. Zinov'ev. *Masloboino Zhirovoe Delo* **12,** 543-5. The above method was applied to the refining of hogbone oil and gave a satisfactory pale oil which did not require bleaching with activated clays or carbon. A. A. Zinov'ev and T. Plyushcheva. Ibid. 583-5. The method is used in refining cottonseed oil. *Ibid.* **13,** 28-9 (1937); through Chem. Abs.

At the Soap Kettle...

Investigations of the physical chemist confirm the scientific correctness of practical soap boiling . . . a brief review of physico-chemical soap research . . . and a prediction of its application in soap-making progress

By Alan Porter Lee

THE manufacture and use of soap have been developed through the entire history of the soap industry along the avenues of practice, rather than those of theory. Only during the past forty or fifty years have the principles of chemistry and engineering been applied to the processes involved, resulting in the production of improved soaps at lower cost to the soapmaker and to the consumer. These developments have been attributable mostly to the technical staffs of the larger soap manufacturing organizations and as is usual in such cases, many smaller companies have shared in the resultant benefits because of the general increase in technical knowledge throughout the industry.

During the past twenty-five or thirty years, there has been a remarkable increase in the number of workers who have devoted themselves to research in the field of physical chemistry. It is only natural that soaps and soap solutions have become the subjects of much of such research, since they offer many interesting problems not encountered in other types of products. Most of the research in the physical chemistry of soap has been conducted in the laboratories of universities rather than those of soap manufacturers. Much of the work accomplished has yet to find practical application by the soapmaker or the soap user, but, as is almost invariably true of "pure" research, the facts deduced therefrom will undoubtedly exert increasing influence upon the practice of the art in future years when they have become more generally known and their relationship to the problems of practice better understood.

Concepts of structure of soaps and soap solutions as propounded by several researchers in physical chemistry and as generally accepted by many leaders in the chemistry of oils, fats and soaps, reveal some interesting views. There is, of course, some divergence of opinion among physical chemists, with the result that several theories are incompatible with each other, but the weight of experimental data seems to be in favor of certain very definite facts concerning the structure of soaps and soap solutions.

The soapmaker is keenly interested in the composition and structure of "neat" soap in the kettle, which, as finished, contains a considerable percentage of water, and in the cooled bar of finished (milled or unmilled) soap, in which, while it contains also a percentage of moisture, has been changed materially in physical structure during the cooling operation.

From the time of the earliest studies of soap by chemists, there has been controversy concerning the manner in which the water is combined in "neat" soap as well as in finished soap, some favoring the theory of chemical combination and others claiming that the water is present as "mechanically held" or adsorbed water of hydration. Physical chemists have shown both of these theories to be untenable, that the "neat" soap as it separates in the kettle is predominantly in a true "fluid crystalline" condition and that the finished bar of soap consists of a heterogeneous mixture of hydrated soap fibres and solid solutions of soap. Other fallacies concerning the nature of soaps and soap solutions included the idea that soap solutions were not in any way ionized and the belief that soaps and their solutions were entirely amorphous or colloidal in structure, lacking entirely any semblance of crystalline characteristics.

Outstanding work in the physical chemistry of soap is that of Maclennan[1] who conducted an ex-

haustive microscopic examination of soap at different stages of the boiling process, during the cooling process and as finished commercial soap. He demonstrated for the first time that "neat" soap in the kettle comprises a mass of "liquid crystals," analogous to solid crystals through possession of the property of causing rotation of the plane of polarized light ("anisotropy"-opposed to the "isotropy" of substances neutral to polarized light). Maclennan's examinations of "neat" soap under polarizing microscopes revealed the presence of several types of soap structure including the following:

1. Solid soap crystals (pure anisotropic salts of specific fatty acids).

2. Liquid soap crystals, strongly anisotropic, fluid, deformable, without definite boundaries, yet growing into and through solutions in the manner of ordinary crystals.

3. Soap fibres, feebly anisotropic tangled or rope-like masses developing in the liquid crystalline mass during cooling or separating from solution at the beginning of formation of soap curds in the graining operation.

4. Soap curd, a mass of fibres mechanically entangling a liquid phase, found in freshly grained soap in the kettle.

5. Soap gels, isotropic (optically inactive) jellies found in transparent solid soaps and in commercial soft soaps, in the latter mixed with drops of anisotropic liquid crystal soap.

6. Dilute soap solutions, isotropic, free of liquid crystals.

In pursuing his microscopic observations through the entire course of the soap-boiling operation, Maclennan was able to report the condition of the charge of each stage of the process. His method involved prompt microscopic examination of small samples taken at intervals on heated slides. During the early stages of saponification the samples revealed the presence of uncombined fat with at least part of the soap present as large globules of anisotropic liquid crystal. When saponification was complete, the microscope showed the fluid crystalline (anisotropic) globules floating in a medium of dilute aqueous (isotropic) soap solution.

During the operation of graining out with salt, the maximum changes in structure were observed in the soap. When fully grained, ready to separate and rise to the surface, the soap consisted chiefly of tangled masses of fibres in a medium of salt lye. As soon as the lye had separated and settled, the surface soap showed partial reconversion into the crystalline fluid state.

This crystalline fluid formed the major portion of the "neat" soap layer in the kettle after finishing and before cooling, whereas the nigre, or weak soap solution between the "neat" soap and spent-lye layers was found to be isotropic or optically inactive before cooling into a typical heterogeneous curd of Type 4 above, that is, a mass of soap fibres mechanically enclosing a liquid phase. The soap fibres in the nigre were found to be only slightly optically active, but were converted to a crystalline fluid by heating and settling for the removal of brine and spent lye.

In summarizing his observations on the boiling process, Maclennan shows that it is dependent upon alternation between the fibrous and the fluid crystal conditions of soap. He states—"Solutions play a minor part during saponification in nigre and soap lyes, whilst soap

curds, as defined scientifically, occur only in the grained soap and the cold nigre".

In developing his studies beyond the boiling process, Maclennan made observations with the polarizing microscope on neat soap, cooling in frames and in rapid mechanical coolers, and on several types of finished commercial soaps.

He reports that during slow cooling, (as in frames) the fluid crystals of the neat soap take on a certain amount of solidity, while soap fibres gradually grow into and through the fluid crystal mass in symmetrical oriented manner. The maximum orientation, both of crystals and of fibres, was promoted by slow cooling, while rapid cooling, in contrast, permitted practically no orientation of structure. In the latter case much of the original fluid crystal persisted as irregular lumps of varying solidity while very fine irregularly placed fibres were seen throughout the entire mass.

Maclennan and others have advanced these facts as forming a theoretical basis for the frequent practical criticism of rapidly-cooled soaps as being inferior to those cooled more slowly (in frames). Well-finished framed soaps under the polarizing microscope show a mixture of solid crystalline fragments with a mass of symmetrically oriented fibres. When the soap sections were heated, the fibres disappeared and the soap became anisotropic, (showing the presence of fluid crystalline matter) between 60° and 100°C.

Commercial transparent soaps were found to consist of solidified soap gel, quite inactive optically and free of crystalline structure. Soft soaps showed an isotropic base containing fluid crystal globules, while "figging" of soft soaps was shown to be caused by a definite separation of a solid constituent.

The work of Maclennan has been of great value in rationalizing the processes of the boiling kettle, while several other physical chemists have studied the nature of soap solutions in the functions of detergency as well as in the boiling operations. The first attempt to apply the phase rule to the process of soap boiling was made by Merklen[2] during the first decade of the current century although he confined his hypotheses to the two-component systems of neat soap-nigre and neat soap-lye. Further work was performed at about the same time by Spring[3] and Hillyer[4].

In more recent years the most interesting reports bearing on the physical chemistry of soap have been those of J. W. McBain, Professor of Physical Chemistry at Bristol University and many of his co-workers. McBain, since 1918, has published frequent communications of studies made in his laboratories on the relationship of phase-rule equilibria data to composition of soap solutions under kettle conditions as well as in more dilute concentrations. Between 1919 and 1926, in collaboration with Salmon, Laing, Taylor, Titley and others, McBain, in pursuit of these studies established the fact that the soap industry had succeeded (through empiric methods) in establishing standards of operating practice which were in close accord with those later determined to be essential through study of phase rule diagrams. In 1925, McBain,[5] in further development of Maclennan's investigations, established that the fluid crystalline and ordinary (isotropic) soap solutions constituted separate immiscible phases and that a third phase, a previously undetected anisotropic fluid crystalline soap, could exist in medium concentrations. McBain called this "middle soap" and showed that all the operations of soap boiling depend upon equilibria between the possible phases present.

McBain and other workers have also published considerable work on the various properties of soap solutions, including the viscosity, surface tension (important as a measure of lathering power), hydrolysis, osmotic activity, and electric conductivity as well as direct washing properties.

These studies have shown particularly that a soap solution comprises a system in which ordinary electrolytes, colloidal electrolytes and neutral colloids are all present in true equilibrium. To explain this condition, McBain adopted the theory that such solutions contain salts in which a simple ion is substituted by an "ionic micelle" consisting of a fatty acid anion combined with a large but indeterminate number of molecules of neutral soap. The ionic micelle carries a large number of electric charges and is heavily hydrated. Changes in the concentration of the soap solution result in considerable change in its equilibrium, dilution tending toward the formation of simple electrolyte, while with increase of concentration the change is toward the ionic micelle, then through that stage to the neutral colloid, which predominates as neat soap is approached. In ionized solutions of soap, the three types of solute, i.e. simple electrolyte, ionic micelle and neutral colloid (electrically charged) can all exist in equilibrium with each other at certain concentrations.

In 1909 Spring[3], demonstrated that, contrary to formerly held belief, the washing properties of soap solutions are not due to free hydroxyl ions, but to the formation of colloidal adsorption compounds between the soap solution and the dirt removed from the object washed. From the work of later investigators, it appears that the active factor in this colloidal adsorption is the neutral colloid micelle, but that the ionic micelle must also be present in considerable proportion to enable the neutral colloid to exert its maximum adsorptive effect.

Other workers in the physical chemistry of soap in recent years include: King[6] who demonstrated the effects of high concentrations of an electrolyte on the viscosity of a homogeneous soap solution, showing by falling ball measurements that the viscosity increases with increase of salt concentration, passes through

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Oil and Fat Outlook

Larger supplies of soap fats will be available over balance of 1937, according to a study of the current situation made by the Bureau of Agricultural Economics

PRODUCTION and available supplies of soap oils and fats will be somewhat larger during the latter half of 1937. Although there are likely to be exceptions, stocks of fatty raw materials for soap manufacture should on the whole show an increase. A small increase in output of this oil, and increase in the imports of that,—each contributing a little to the total tonnage,—is expected to build a better fat supply. This appears to be the general conclusion drawn from a comprehensive study of the current oil and fat situation in its relation to soap manufacture, made by the Bureau of Agricultural Economics of the Department of Agriculture.

For some time, soapers in company with other fat and oil consumers, were faced with a shortage of fats and oils, rising prices, and uncertainty as to the course excise taxes might take. Now supplies seem to be more plentiful and prices are easier, according to the report. During the first half of the current year, domestic production of major soap fats has been well above production in the same period of 1936, imports have been comparatively large and plentiful supplies of all domestic vegetable oils are forecast for the remainder of the year. New fats and oils are being utilized, each contributing little individually, but the aggregate contribution amounting to an appreciable percentage.

Prices of the principal soap fats and oils averaged slightly lower in July 1937 than in June and lower than the average prices for January to June. Prices in the first half of this year, however, were considerably higher than the average prices for January to June 1936. Prices in the first half of 1936 were definitely higher than average prices for the year 1935 and averaged almost double the prices obtaining in the first 4 months of 1934. In short, prices of all the major soap oils have been higher in price so far in 1937 than they averaged even in the "high" year 1929. The wholesale price of soap tends to fluctuate less widely than the price of oils going into their manufacture, but they have followed the broad movements of the oil prices.

Production of tallow is expected to be lower during the last half of 1937 than it was in the same period in 1936. But total production for the year 1937 may be equal to or slightly above production in 1936, which amounted to 608 million pounds compared with 442 million pounds in 1935 and an average of 630 million pounds in the 5 years 1930-34.

Indicated consumption of coconut oil for all purposes in the United States for the first 6 months of 1937 is about 56 million pounds below the same period of 1936, but its use in oleomargarine has been some 50 million pounds less than in the first half of 1936 and stocks are lower than a year ago at this time. Therefore the amount of coconut oil used in soap January to June 1937 may have been as great or greater than in the same period last year. Reports from the Philippines indicate expected increased supplies of copra during the remainder of 1937.

Vegetable oil refining foots and some vegetable oils contribute a goodly percentage to soap materials. Therefore, the prospective large cotton, corn, and soybean crops will have direct and indirect effect on the total supply of soap materials.

Imports of palm oil into the United States in 1936 were more than double imports in 1934 and imports for the year 1937 promise to be still larger as imports in the first half exceeded imports in the first 6 months of 1936 by more than 6 per cent. Imports into the United States of palm-kernel oil and kernels in terms of oil equivalent have amounted to more than 100 million pounds in the first 6 months of 1937 compared with 32 million pounds during the whole of 1936. Oil equivalent of imported babassu nuts amounted to about 35 million pounds in 1936, the first year for which data are available. During the first half of 1937 oil equivalent of imports amounted to almost 27 million pounds.

Domestic production of fish oils has increased steadily in the past 6 years, mounting from 64 million pounds in 1931 to 267 million in 1936. The new season is just opening. Production of whale oil is an industry carried on by huge floating factories outside the borders of individual nations. Production is attributed to the nation under whose flag the floating factory operates.

Prospects for 1937-38 whaling season are that considerably more whaling will be carried on under the American flag than in recent years. If the season is a good one "domestic production" may be materially increased.

Price per pound of specified soap oils, selected years, 1912-37

Year	Coconut oil, crude, Pacific Coast	Palm-kernel oil, denatured N. Y.	Palm oil, crude, N. Y.	Tallow, inedible, Chicago	Sardine oil, Pacific Coast	Cotton-seed oil, crude, f.o.b. S.E. mills	Olive oil, prime foots, N. Y.
	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1912	(7.1)	....	....	6.4	....	5.1	....
1913	(9.2)	....	7.4	6.5	....	5.9	7.8
1914	(9.6)	....	8.1	6.4	....	5.7	8.7
1916	(12.6)	....	12.2	9.4	....	9.3	10.7
1919	15.3	[1] 18.2	[2] 18.0	14.0	....	18.6	[3] 21.0
1921	8.1	[1] 9.5	7.0	5.3	....	6.2	8.5
1929	7.1	[1] 8.4	8.2	8.0	6.1	8.1	9.7
1932	3.2	4.8	3.8	2.7	1.9	3.1	4.6
1933	3.0	4.3	3.8	3.0	2.2	3.7	5.5
1934							
Jan.-Apr.	2.5	[4] 4.1	3.8	3.0	2.2	4.1	6.7
July-Dec.	[5] 5.7	[5 6] 5.9	[5] 6.3	4.5	3.0	6.9	7.3
1935	7.4	7.5	7.7	6.2	4.6	9.2	8.6
1936							
Jan.-June	7.2	7.8n	7.6	5.0	4.4	8.3	8.3
Sept.-Dec.	9.5	8.9	8.3	7.1	4.8	9.0	9.5
1937							
Jan.-June	10.6	10.0	9.6	8.6	6.9	9.5	11.6
June	8.6	8.8	9.0	8.2	6.9n	8.2n	11.2n
July	8.1	8.5	8.7	8.2	5.9	8.0n	11.2n

[1] Quoted as natural. [2] Average for 10 months. [3] Average for 8 months.
[4] Barrel price.
[5] Includes 3 cent excise tax on first domestic processing imposed by Revenue Act of 1934, beginning May on palm and palm-kernel oils, June on coconut oil, and continuing to date.
[6] Average September-December; quoted as bulk, beginning September 1934.
Compiled from the Oil, Paint, and Drug Reporter, average of quotations for Saturdays during the month, except tallow, which is from the National Provisioner average of weekly quotations during the month. Figures in parentheses are interpolated.
Coconut, sardine, and cottonseed oil are quoted in tanks; palm, and olive oil foots in casks.
For rates of duty and excise taxes on the above fats and oils, see table 166 in Fats, Oils, and Oleaginous Raw Materials, U. S. Department of Agriculture Statistical Bulletin No. 59, May 1937.

The report then goes on to review some of the shifts in trend of fat and oil consumption at the soap kettle and to give a resume of the background as soap raw materials of the more important fats.

The major shifts since 1904 in types of soap fats consumed are (1) a decline and recovery in the use of animal fats; (2) an increase up to 1916 in the consumption of cottonseed oil in soap, followed by its decline and practical disappearance from the soap kettle; (3) an increase in the percentage contributed by the quick lathering hard oils (coconut and palm-kernel) to the total consumption of saponifiable materials from 11 per cent in 1912 to 21 per cent in 1923; (4) a pronounced expansion in the consumption of palm oil, from 8 million pounds in 1912 to 192 million in 1930, with a sharp decrease in 1935 and 1936.

Although there was a distinct shift in the proportion of the three major groups of oils used in soap and therefore in types of soap produced as between the pre-war and post-war periods, in the last several years, there has been comparatively little variation in these proportions. In 1914, of the total of fats and rosin going into the consumption of soap, 11 per cent were of nut oils, 39 per cent of the tallow class, and 32 per cent of soft oils, and 18 per cent rosin.

For the 10 years from 1925 to 1934, the percentage of quick lathering fats (coconut, palm kernel, etc.) remained comparatively stable, averaging 21.5 per cent and ranging from a low of 20 per cent to a high of 23 per cent. The percentage dropped to 16 per cent in 1935 (following the imposition of the excise taxes) and returned to 20 per cent in 1936 after an excise tax was placed on imported tallows and greases. The 1935 drop was accompanied by an almost corresponding increase in soft oils, the proportion of hard slow lathering fats remaining approximately the same. Variations in the relative quantities of individual oils were much wider on the whole.

Coconut oil has been imported since 1870, but the volume was very small for many years. The oil was apparently first used entirely in soap making. The first quantitative information on utilization is furnished by the Census of 1910, which reported 51 million pounds of coconut oil and palm-kernel oil used in soap manufacture in 1904, and 89 million pounds in 1909. The Tariff Commission estimates that 78,816,000 pounds of coconut oil were consumed in 1912 by the soap industry. In 1914, use of the oil in oleomargarine appears for the first time (322,000 pounds), and in 1917 its first use in lard compounds is reported as 5,545,000 pounds.

In the past 20 years coconut oil has come to be considered a very important quick lathering soap material, contributing an average of about 20 per cent of saponifiable materials used in the manufacture of soap since 1921 except in the year 1935 when it dropped to 14 per cent. Coconut oil does not mix well with rosin, and it is therefore used only in minor proportions in yellow soap. There is another factor that needs to be considered in explaining the use of coconut oil in soap. Glycerin is a valuable by-product of soap manufacture, and the quantity of glycerin recoverable from a particular oil is a factor in choosing among oils which may be used for the same purpose. This factor favors coconut oil, as it yields 18 per cent of crude glycerin compared with 13½ per cent from tallow, 13 per cent from cottonseed oil, 12 per cent from palm oil, and none from rosin.

World exports of copra and oil, as indicated by available data have remained at a figure very close to 2,100 million pounds for the past 4 years. Indicated consumption in the United States for the first 6

months of 1937 is about 56 million pounds below the same period of 1936 but its use in oleomargarine has been some 50 million less than in the first half of 1936, and stocks are lower than a year ago. The amount available for use in soap, therefore, has probably been equal to or greater than last year. Private reports from the Philippines indicate expected increased supplies of copra during the remainder of 1937.

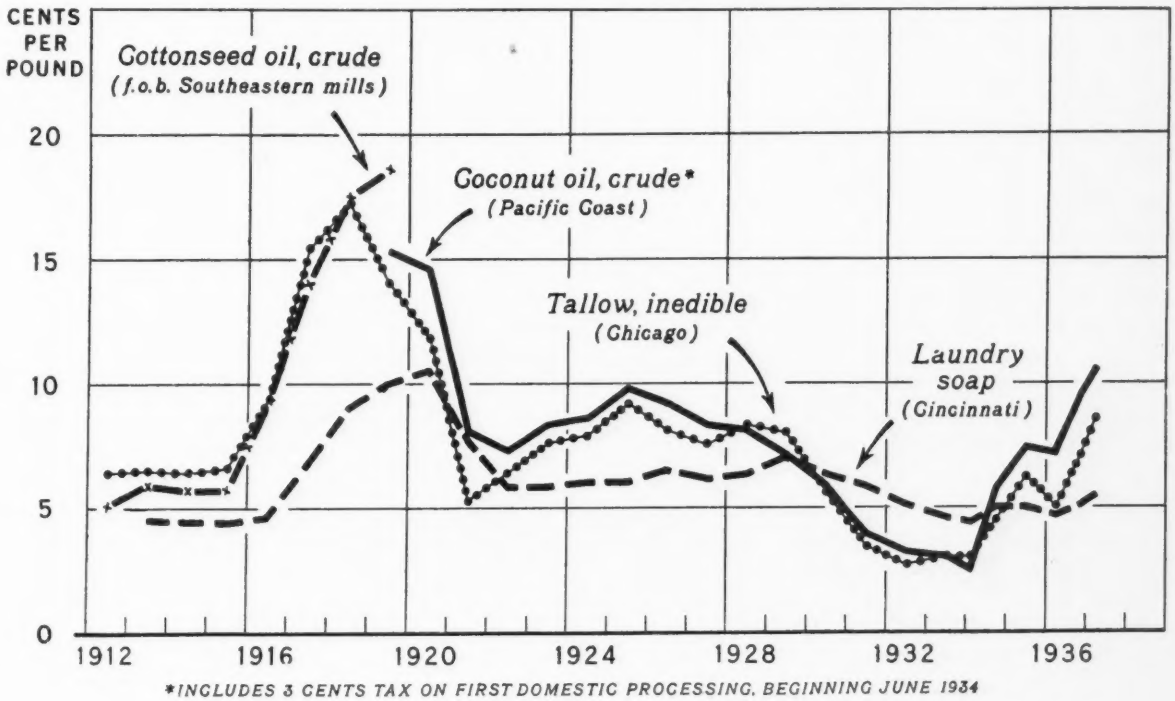
Palm-kernel oil is a near equivalent of coconut oil and is apparently almost completely interchangeable with it in soaps. World exports of kernels in terms of oil equivalent have increased from 527 million pounds in 1931 to 820 million pounds in 1936. Imports into the United States of palm-kernel oil and kernels in terms of oil equivalent have amounted to more than 100 million pounds in the first 6 months of 1937 compared with 32 million pounds in the whole of 1936. Supplies for continued imports seem to be available.

Babassu oil is similar to coconut and palm-kernel oils in its high lauric acid content and apparently has a high degree of interchangeability with those oils in soap making and in oleomargarine. Oil equivalent of imported nuts amounted to about 35 million pounds in 1936, the first year for which data are available. During the first half of 1937 oil equivalent of imports amounts to almost 27 million pounds.

Tallow production for the first 6 months of 1937 is estimated at 332 million pounds compared with 266 million pounds in the same period in 1936, but consumption also has been running higher this year, amounting to 403 million pounds as against 327 million in the first 6 months of 1936. Stocks are therefore almost 90 million pounds lower than at the end of June 1936. (See table 18.) Production is expected to be lower during the last half of 1937 than it was last year as fewer cattle will be slaughtered, but even if tallow production drops as much as 15 per cent below production in the last half of 1936, total production for 1937 will still be slightly above production last year.

Imports rose from practically zero in 1933 to 246 million pounds in 1935. Production in 1935, however, was the lowest estimated since 1921, and production plus the large imports totaled less than production in 1934. Imports began to drop off markedly in March 1936. In the two months July and August of 1936 imports amounted to 36 million pounds just getting in in time to avoid the tax. Imports have been negligible since the imposition of the excise tax in August 1936, which placed a tax of 3 cents per pound on all imports in addition to the duty of one-half cent per pound. Imports since that date have amounted to a total of only about 5 million pounds.

PRICES OF COCONUT AND COTTONSEED OILS, TALLOW AND LAUNDRY SOAP, 1912 TO DATE



*INCLUDES 3 CENTS TAX ON FIRST DOMESTIC PROCESSING, BEGINNING JUNE 1934

U. S. DEPARTMENT OF AGRICULTURE NEG. 32604 BUREAU OF AGRICULTURAL ECONOMICS

World exports of palm oil have increased from 570 million pounds in 1931 to over a billion pounds in 1936. From Africa the increased exports have amounted to more than 45 per cent, while exports from Netherland India and British Malaya have increased by 200 per cent in the same period and are expected to continue to increase. Imports into the United States in 1936 were more than double imports in 1934 and imports for the year 1937 promise to be still larger as imports in the first half exceeded imports during the first 6 months of 1936 by more than 6 per cent.

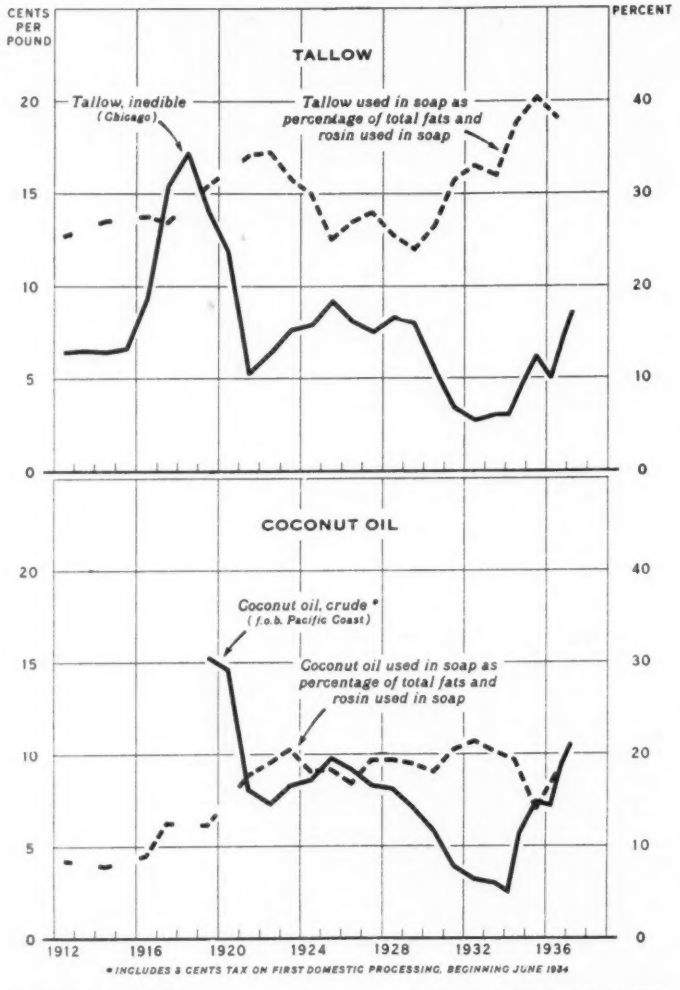
From 1931 to 1934, an average of almost 75 per cent of palm oil consumption in the United States went into soap, but the imposition of the excise tax in May, 1934, and the shortage of food oils in the United States permitted palm oil to enter the shortening industry. And in 1935 and 1936 only about half as much palm oil was used in soap as in the preceding 4 years, and 50 per cent of consumption went into shortenings.

The new season for fish oil production is just opening. Domestic production has increased steadily in the past 6 years, mounting from 64 million pounds in 1931 to 267 million pounds in 1936, and in the same period utilization in soap has increased from 58 million to 128 million pounds. More whale oil than fish oil was used in soap in 1931, namely, 69 million pounds, but utilization in soap dropped to 28 million pounds in 1935, just after the tax was imposed. In the past most of the whale oil consumed in the United States has been imported.

The industry of producing whale oil is carried on in gigantic floating factories that can work independently of any land station. Thus production of any country does not mean production from that country's nearby waters but production of whalers operating under the flag of that country. Domestic production, that is production under the American flag, rose from 4 million in 1933 to 31 million pounds in 1936. Prospects for the 1937-38 season are that considerably more whaling will be carried on under the American flag than in recent years. If the season is a good one, "domestic production" may be greatly increased.

The Crop Reporting Board reports for cotton as of August 1, 1937, indications of a total yield of 15.6 million bales, which means a possible oil production of between 1,500 and 1,600 million pounds of cottonseed oil. In the early years of the production of cottonseed oil it was probably used mainly in soap. It has been estimated that in 1916, 195 million pounds of cottonseed oil, or about 14 per cent of total production was used in soap, contributing 16 per cent of all the saponifiable materials used. Tallow contributed almost 28 per cent, rosin 14 per cent, and coconut oil only 9 per cent. The average price for that year of crude cottonseed oil, Southeastern mills, was 9.34 cents per pound, the average for inedible tallow at Chicago was 9.43 cents per pound, and for crude coconut oil over 12 cents. Immediately after this period the use of cottonseed oil in soap dropped very sharply and practically disappeared from soap by 1922, except for very small quantities usually of damaged or off grades. Cotton foots, however, contribute a goodly percentage and the prospective large cotton crop will not be without its effect on the total supply of soap materials.

PRICES OF TALLOW AND COCONUT OIL, AND AMOUNTS USED IN SOAP AS PERCENTAGES OF TOTAL SAPONIFIABLE MATERIALS USED IN SOAP, 1912 TO DATE



Proposed Specification for

SHAVING SOAPS

AT the present time, there is no U. S. Government specification for shaving soap or shaving cream. A new proposed specification has been drawn up by the Technical Committee on Detergents of the National Bureau of Standards, dated August 12, 1937. Inasmuch as the Committee has very little data in the way of previous specifications for shaving soaps by which to be guided, its chairman, F. W. Smither, is particularly anxious to secure the comments of manufacturers and other interested parties in order that the proposed specification may be revised before it is adopted and approved. Comments should be addressed to him, care of the National Bureau of Standards, Washington, D. C. Four types of soap are called for in the specification, cakes, sticks, rolls, and powder, and two types of cream, lather and brushless.

The proposed specification follows:

A. Applicable Federal Specifications.

A-1. The following Federal specifications of the issue in effect on date of invitation for bids shall, in so far as applicable, form a part of this specification:

P-S-536—Soap and Soap-Products; General Specifications (Methods for Sampling and Testing).

RR-S-366—Sieves; Standard, Testing.

B. Types and Classes.

B-1. Shaving soap and cream shall be of the following types and classes, as specified:

Type I. Soap;
- Class (A).—Barber's cakes (for cup or bowl).
- Class (B).—Stick.
- Class (C).—Roll (cakes packaged in 1-lb. roll).
- Class (D).—Powder.

Type II. Cream;
- Class (A).—Lather cream.
- Class (B).—Brushless cream.

C. Material.

C-1. Shaving soaps, Type I, shall be high-grade neutral products that yield a heavy, creamy lather that will remain moist upon the face until the shaving is completed. In the case of Class B (stick), the soap shall adhere to the face when the stick is moistened and rubbed thereon. In the case of Class D (powder), the material shall be free-flowing and shall not cake in the container. The material shall conform to the requirements set forth in Sections D and E.

C-2. Type II—Shaving Cream.

C-2a. Lather cream, Class A, shall be a soft, uniform cream or paste free from free alkali. It shall be of such consistency that it will not flow from the tube without pressure, not require undue pressure to extrude it, and not lose its form when extruded from the tube. It shall distribute well into the bristles of a shaving brush and adhere to the face when applied thereto directly from the tube. It shall yield a copious lather that does not dry rapidly on the face and shall rinse readily from a razor blade. The material shall conform to the requirements set forth in Sections D and E.

C-2b. Brushless cream, Class B, shall be a soft, uniform cream or paste free from free alkali. It shall remain soft in the tube; shall spread easily; shall lubricate the razor during the shaving process; shall soften the hair; and shall rinse readily from a razor blade. The material shall conform to the requirements set forth in Sections D and E.

D. General Requirements.

D-1. **Type I. Shaving Soap, Classes A, B, C, and D.—**

D-1a. **Color.**—Shall be as specified by the purchaser.

D-1b. **Odor.**—Shall be pleasant and shall be as specified by the purchaser.

D-1c. **Lathering Quality.**—Shall be satisfactory. (Shall conform to the test described in paragraph F-1b.)

D-1d. **Caking** (Class D only).—The material shall be free-flowing and shall not cake in a closed container at room temperature.

D-1e. **Bid Samples.**—Unless otherwise specified, each bidder shall submit with his proposal a sample of the material that he proposes to furnish, to show color, odor, condition, and performance (see paragraph C-1). The sample so furnished shall be kept for comparison with samples from deliveries (see paragraph F-1a).

D-2. **Type II. Shaving Cream, Classes A and B.—**

D-2a. **Color.**—Shall be as specified by the purchaser.

D-2b. **Odor.**—Shall be pleasant and shall be as specified by the purchaser.

D-2c. **Consistency.** — Shall be as stated in paragraph C-2a and C-2b. When the packed tubes are kept at a temperature of 38°C (100°F) for 24 hours and then at a temperature of 15°C (59°F) for 24 hours, the material at the end of each 24-hour period shall on the application of slight pressure extrude from the tube as a smooth mass without any appreciable change in consistency and without any hardening or separation of the ingredients. (See paragraph F-1a.)

D-2d. **Containers.** — The containers shall be the usual collapsible tube type having rustproof caps. The container including the cap shall not be attacked, chemically, by the shaving cream. Tubes shall be tin of such purity as will insure against discoloration of the shaving cream in storage and shall be constructed in such manner as will prevent the closed end from opening when pressure is applied to extrude the cream for use. Contractors will be required to replace tubes that corrode in storage. (See paragraph F-1a.)

D-2e. **Lathering Quality** (Class A only).—Shall be satisfactory. (Shall conform to the test described in paragraph F-1b.)

D-2f. **Bid Samples.**—Unless otherwise specified, each bidder shall submit with his proposal two samples (tubes) of the material that he proposes to furnish, to show color, odor, consistency, performance (see paragraphs C-2a and C-2b), and action on container (see paragraph D-2d). The samples so furnished shall be kept for comparison with samples from deliveries. (See paragraph F-1a.)

E. Detail Requirements.

E-1. **Type I, Shaving Soap, Classes A, B, C, and D.**

E-1a. The material shall conform to the following detail requirements as indicated in following tables:

E-1b. **Computation.** — The percentage of moisture shall be computed, and reported by the testing laboratory, on the soap as received. The percentages of all other constituents shall be calculated and reported on an assumed moisture content of 10 per cent for Classes A, B and C, and of 2 per cent for Class D. For basis of purchase see paragraph I-2.

E-2. **Type II. Shaving Cream, Classes A and B.—**

(*Turn to Page* 67)

The house of Turner has rounded out 75 years of service to chemical buyers. The wealth of experience gained over this long period of time insures your receiving a uniform product of the highest standard at the lowest possible cost. Concerning service—since moving into our new Distribution Center in Ridgefield, New Jersey, 3½ miles from the Hudson River in the heart of the industrial East, we are in a position to give our customers the best possible service.

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NEWS . . . . . .

Form Illinois Soap Firm

Illinois Bleach & Soap Co. has recently been incorporated in Chicago to deal in soaps, dyes, bleaches, etc. Incorporators are M. L. Lutinsky, J. Lutinsky and M. Henry. Papers of incorporation were filed by Samuel C. Horwitz, 10 S. La Salle St., Chicago.

Introduce New Dishwash

A new soapless preparation for washing dishes, "Pop", has recently been placed on the market by Popular Brands, Inc., New York, a newly formed company. Preliminary test campaigns have been started in Syracuse and Binghamton, New York, and future sales plans will be announced after the results from the test campaigns are checked. Newspaper copy and radio have been scheduled for a 10-week period, according to Tracy-Locke-Dawson, advertising counsel. The new product is presented in a package similar to cardboard milk bottles which taper to a pour-spout top. The product is said to clean by means of low surface tension instead of, as with soaps, by dissolving the grease.

Hedley Expansion Confirmed

Plans to expand the soap factories of Thomas Hedley & Co., Procter & Gamble Co., British subsidiary, which have been frequently rumored and as frequently contradicted, have finally been officially confirmed. A statement from the Hedley board recently said that the reports published last month were premature and not based on definite information. The latest official announcement states that a new soap factory is to be built at Purfleet, close to London, and the Newcastle and Manchester plants are to be considerably enlarged. The chief products at present manufactured are Oxydol soap powder, Sylvan soap flakes, and Fairy laundry soap.

Move Lahoud Soap Offices

The office and warehouse of Lahoud Products, Inc., soap manufacturers, formerly located in Long Island City, have just been moved to 245 West 14th St., New York City. Felipe Lahoud, a director of Lahoud Freres, Inc., San Juan, Porto Rico, has recently returned from Porto Rico and will take active charge of soap sales in the New York area. Mr. Lahoud advises that a campaign has recently been started to expand sales among the Spanish speaking population of the metropolitan district. The company features a highly perfumed soap of a type which has proven very popular in Porto Rico.

Felipe Lahoud

Repackage "Silver Dust"

Hecker Products Corp., New York, has started a newspaper advertising campaign to introduce its newly repackaged "Silver Dust" cleanser. The new container is said to contain 48 per cent more than the old one. The price has not been increased.

Diversey Names Representatives

Diversey Corp., Chicago, manufacturer of "Diversol," "Relion," "Protex Metallum" and a complete line of dairy cleaners and sterilizers, has announced the appointment of the following additional service representatives: A. C. Elkerton—Boston, B. H. Gregg—Spokane, Wash., A. E. Harriman—Kansas City, K. Hassler—San Francisco, W. B. Hinds—Harrisburg, Pa., G. H. Jackson—Atlanta, R. Mordue—Columbus, Ohio, M. W. Nay—Youngstown, Ohio, J. R. Nelson—Rochester, Minn., H. Richter—Mankato, Minn., H. F. Sarman—Jacksonville, J. A. Thompson—Omaha.

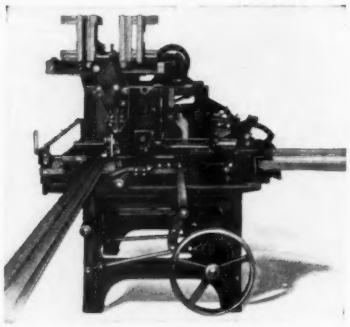
Palmolive Judgment in London

Soap sold by the John Barker Department Store, one of London's biggest stores, was the subject of a motion for judgment before Justice Bennett in the British High Court recently by Colgate-Palmolive-Peet, Ltd., manufacturers of Palmolive soap.

Justice Bennett made orders against John Barker and Co., perpetually restraining the firm from infringing the plaintiffs' trade-marks; from advertising, offering for sale or selling any soap not of the plaintiffs' manufacture or merchandise as "Palmolive" or "Palm Olive"; from supplying any such soap in purported fulfilment of orders for Palmolive soap, and from otherwise passing off or attempting to pass off such soap as the plaintiffs' soap. The defendants were also ordered to deliver up, on oath, all labels, price-lists or other things in their possession or control, the use of which could either be a breach of either of the injunctions.

The judge directed an account to be taken, in case the parties dif-

DISTINCTIVE PACKAGING
HIGH SPEED PRODUCTION
UTMOST ECONOMY



A few of the many well known soaps that are wrapped on our machines.

Here's the machine used to wrap practically all the leading toilet soaps in the country. Adjustable for many different sizes . . . handling almost any type of wrapping material—the Model S gives soap manufacturers distinctive, individually-styled wrapping at the lowest possible cost.

With its speed of 150 cakes per minute (twice as fast as former machines it has replaced) Model S ensures low labor cost. Utmost mechanical efficiency produces neat and attractive wrapping, with the minimum amount of wrapping material per cake. The machine may be equipped to insert cardboard or circular between inner and outer wrapper, if desired.

SPECIAL MACHINES

In addition to the widely used Model S, we have built many special machines to meet special requirements. When you have a packaging problem, avail yourself of our long experience in soap wrapping, and our complete facilities. Consult our nearest office.

PACKAGE MACHINERY COMPANY
Springfield, Massachusetts

NEW YORK CHICAGO CLEVELAND LOS ANGELES

Mexico, D. F., Apartado 2303 - Peterborough, England: Baker Perkins, Ltd.
Melbourne, Australia: Baker Perkins Pty., Ltd.

PACKAGE MACHINERY COMPANY
Over a Quarter Billion Packages per day are wrapped on our Machines

fered, of all profits in respect of the defendants' white Palm and Olive soap sold by them in response to all written orders sent subsequent to the issue of a certain catalogue and before the issue of the writ.

Soap Committee Meet Oct. 19

Committee D-12 of the American Society for Testing Materials, in charge of formulating standards and specifications for soaps and detergents, will have its first fall meeting on October 19 in New York City. The committee had originally planned to meet October 4th and 5th, but abandoned these dates to avoid conflict with the convention of the Laundry Owners National Association in Cleveland, October 3 to 7. A final call for the New York meeting will be sent out by the committee chairman, Harry P. Trevithick, about September 15th.

German Whaling Exhibit

An exhibition showing the importance of whale oil in industry today has just been opened at Bremen, Germany. The principal sections illustrate the development of whale-catching, and include numerous models of the latest types of whale-catchers and motor-boats. Another section covers the industrial importance of the whale, especially in soap and margarine manufacture. At the opening of the exhibition it was announced that Germany was the largest whale oil-consuming country in the world.

New Whalers for Japan

Permission to construct two 20,000-ton whalers and ten catcher-boats, to be ready for the 1940 whaling season, has been given by the Japanese Ministry of Agriculture and Forestry to the Great Japan Pelagic Whaling Company. These new ships will bring the total number of Japan's large floating whaling factories up to ten. The Ministry will not issue any further permits for the construction of whalers. Japan did not participate in the recent International Whaling Conference in London but has promised to be represented at the next conference called on the subject.

GEORGE S. COOPER

George Cooper returns to Diamond Alkali at Pittsburgh as vice-president in charge of sales after an absence of five years during which he was vice-president of the Prior Chemical Co., New York. Mr. Cooper was sales manager of Diamond Alkali from 1922 to 1932. He started in the chemical business with Hooker Electrochemical in 1919. His other education he received at George Washington University and the U. of West Virginia. He succeeds Fred G. Lancaster who recently retired as sales director of Diamond.

New Unilever Organization Plan

Full details have been announced of the plan foreshadowed by Francis D'Arcy Cooper at the annual meeting last May, of internal reorganization of the great Unilever combine. The plan has two main objectives, to transfer part of the earning assets to the Dutch section of the combine, so as to avoid double taxation should it become necessary to transfer profits from the British company to the Dutch, and to simplify the entire structure of the group, which will then be able to carry out further economies. It is the intention of the company to distribute a larger proportion of its earnings in future.

As a result of the reorganization, there will be two main companies in place of three, "Lever Brothers and Unilever, Limited" and "Lever Brothers and Unilever N.V." Lever Brothers as such will disappear entirely. It will be amalgamated with Unilever, Limited, and its assets outside the British Empire, principally in America, France, Belgium, and Holland, will be transferred to a wholly-owned subsidiary of Unilever N.V. The price to be paid for the greater part of these assets will be £11,892,989 ($59,464,945), of which £11,000,000 ($55,000,000) will remain on loan at 3 per cent.

Thus "Lever Brothers and Unilever Limited" becomes a wholly British concern and "Lever Brothers and Unilever N.V." acquires all foreign interests. With minor adjustments the dividend equalization agreement between the English and the Dutch companies is to remain.

Under the plan, shareholders are assured of the minimum disturbance of their present holdings. The capital structure of Unilever N.V. remains unchanged. Shareholders of Lever Brothers will retain their present holdings, but will be asked to admit the 7 per cent and 5 per cent preferred capital of Unilever Limited on a par with the senior class of Preference capital of Lever Brothers. Against this, however, it is maintained that the preference and preferred shareholders of Lever Brothers will be placed in a stronger position because there will be more ordinary capital and more reserves behind them and because on the basis of the 1936 results the revenue cover will be increased. Shareholders of Unilever Limited will exchange their present holdings of preference, ordinary or deferred capital for similar securities in the amalgamated company on a £ for £ basis.

Colgate Earnings Higher

Net profit of Colgate-Palmolive-Peet Co. showed a substantial gain for the first half of 1937, totaling $1,715,606 as compared with $370,198 for the same period in 1936. This remarkable gain was made in spite of the necessity for writing off $500,000 for flood damages at the Jeffersonville, Ind., plant.

Milwaukee Soap Co. Moves

Milwaukee Soap Co., formerly located at 1445 North 31st St., Milwaukee, has moved recently to new quarters at 1363 North 42nd St.

Add to P. & G. Coast Plant

Plans have been drawn for a large-scale addition to the soap and oils plant of Procter & Gamble Co. at Long Beach, Calif., to be built in the near future, and to cost approximately $1,000,000. Additional details are not yet available.

New Malaya Palm Oil Factory

As a result of the steady progress now being made by the Malayan palm oil industry, the big Dutch machinery factory, Stork Brothers and Co., Amsterdam, has received an order from a French plantation enterprise for the construction of a complete palm oil factory with a production of 7,000 tons per annum. The equipment will be sent to Malaya in the near future.

Analyze Cleaning Costs

A folder on "Wyandotte" detergent just issued by J. B. Ford Co., Wyandotte, Mich., is noteworthy for its method of presenting information on the cost of various cleaning operations with this particular material. Costs are presented, not in terms of so much per pound of cleaner, but as so much per square footage of space cleaned. In a recent issue of *Printers' Ink* the editors comment in the following favorable manner on this manner of presenting cleaning costs: "This is a technique that should be used more often in translating costs into terms that mean something to the prospect. Pretty generally the man who is going to buy the product is far more interested in what it will do than in the bare facts of its cost per quart, pound or barrel.

"One picture is captioned '507 Square Feet Per Pound' and the copy points out that a single pound of the product 'will leave 507 square feet of soiled painted surface looking like new.' In cents this means that the cost of cleaning 507 square feet is 'six or seven pennies for material plus your regular hourly wage for your workers.'

"Another caption says '312 Times For One Dollar' and explains that for less than $1, one hundred square feet of flooring can be mopped six nights a week for fifty-two weeks with 'Wyandotte Detergent'."

GEORGE W. MERCK

A name famous in the world of chemicals has been added to the Colgate board of directors, — George W. Merck, head of Merck & Co., Rahway, N. J., recently elected a member of the board of Colgate-Palmolive-Peet Co. This is in line with the company's recently announced policy of electing to the company board prominent business executives to represent the large number of holders of C-P-P securities among the general public.

Watkins Signs FTC Stipulation

R. L. Watkins Co., New York, has just signed a U. S. Federal Trade Commission stipulation agreeing to discontinue certain false and misleading representations in advertising "Dr. Lyon's" tooth powder. The Watkins company will stop advertising that "Dr. Lyon's" tooth powder has twice the cleansing properties of tooth paste, is doubly efficient, and costs only half as much to use; that there is nothing known that will clean, whiten or polish teeth so quickly or effectively as powder; that dentists everywhere recommend "Dr. Lyon's," and that people by the thousands or millions are discarding other methods of teeth cleansing and are using powder instead.

Check "Rose-X" Claims

Roselux Chemical Co., Brooklyn, selling "Rose-G," a cleaning compound, has just signed a stipulation with the U. S. Federal Trade Commission, agreeing to stop using on labels or in any other manner the words "removes stains" so as to imply that the product will remove stains of all types, when such is not a fact. The company also will refrain from using the words "excellent for the hands."

Hungary Stops Sunflower Export

The Hungarian soap industry has just entered into an agreement with the Hungarian government to use domestic sunflower oil instead of imported fish oil. The factories obligated themselves to take over the entire sunflower seed production of Hungary amounting to 1,000 carloads at fixed prices from the Futura Association, the purchasing agents of the government. The price was fixed at 20 pengos per quintal for November, 21 pengos for December and 22 pengos for January. In connection with this agreement, the government will prohibit the export of sunflowerseeds and sunflower oil, and the import of fish oil. The hardening of the sunflower oil necessary in soap manufacturing will be done by concession. The government has assured the soap factories that the other raw materials needed by them, principally copra, will be permitted to be imported in unchanged quantities.

Babbitt Renews Radio Time

B. T. Babbitt, Inc., New York, has just renewed a radio advertising contract for its serial "David Harum" which is given five times a week over the NBC red network. Sales of "Bab-O" are said to have gained 400 per cent since inauguration of the program, with half a million new customers reported for the first half of 1937.

Leverhulme Heir Married

Hon. Philip William Bryce Lever, only son of Viscount Leverhulme, governor of Lever Bros., was married recently at St. Andrew's, Bebington, Cheshire, to Margaret Ann Moon, only child of John Moon, of Tiverton. The wedding was one of Cheshire's social events this season.

Soap Heir in Royal Squadron

The most important event of the British yachting season at Cowes, which has just closed, was the election to the Royal Yacht Squadron (Britain's most exclusive yacht club) of a Cabinet Minister. He is R. S. Hudson, Secretary to the Department of Overseas Trade, and the best-known member of the famous soap family of that name. Mr. Hudson is one of the wealthiest members of the British Government, his fortune coming from the family soap business of which his father, R. W. Hudson, was the head. He started his career in the Diplomatic Service, but left it for politics in 1923. His wife was formerly Miss Elsie Randolph of Philadelphia.

Chicago Associations Golf

The final 1937 golf tournament of the Golf Auxiliary of the Chicago Drug and Chemical and the Chicago Perfumery, Soap and Extract associations was held at Kildeer Country Club, on August 10. The year's largest crowd of members and guests were on hand to enjoy the day of golf and the banquet which followed. Prize winners were as follows: *Class A*—H. K. Young, T. C. Sheffield, J. Bodevin and T. Morgan tied for 1st, H. A. Baumstark 5th; *Class B*—T. M. Gilson, W. L. Johnson, H. B. Elwell, R. L. Holland, A. C. Shepard, R. G. Brown and F. K. Thayer tied; *Class C*—W. H. Schutte, H. J. Edmon and C. P. Van Schaack, Jr. tied, W. W. Scott 4th, G. A. Cammerer 5th; *Class D*—W. R. Nay, G. F. Pauley and F. S. Topper tied, S. Rice 4th, J. W. Painton 5th. Guest prizes were won by C. L. Clardy, R. C. Johnson, F. A. Llewellyn, R. Glanz, A. C. Stepan, Jr., Chas. Schuesler and H. McKinney. The inter-city tournament will be held September 21st at the Birmingham Country Club, Detroit. Plans, which are being formulated now, will be announced in the near future. It is expected that a large number of the Chicago members will participate.

Rupert C. Watson with Fred Firmenich, head of Firmenich & Cie., Geneva, Switzerland, perfuming materials house. This photo taken at the estate of Mr. Firmenich on Lake Geneva during a recent visit of Mr. Watson, accompanied by Mrs. Watson, to the main office of the firm in Geneva. Mr. Watson is vice-president and general manager of the American branch company, Firmenich & Co., New York.

Oil Trades Outing Sept. 21

The final 1937 sports outing and golf tournament of the Oil Trades Association of New York will be held at Pelham Country Club, Pelham, N. Y., September 21. Golfers will compete for the Bert Squier Trophy, the association championship and other prizes. A new outdoor swimming pool has recently been opened at the club which will offer another diversion for golfers and non-golfers as well. Reservations should be made with A. J. Squier, 15 Moore St., New York.

Norway Record Whaling Season

Statistics just issued by the Norwegian Government show that 44,782 whales were caught in all areas during the season 1935-36, thus breaking all previous records in point of number. The number of whales caught in waters outside the Antarctic increased considerably, 30.8 per cent of the total number being caught outside the Antarctic, as compared with 19 per cent in the preceding season. For the Antarctic the figures were 69.2 per cent and 81 per cent respectively. So far as the number of barrels of oil is concerned, 15.1 per cent were produced outside the Antarctic in 1935-36, as against 8.8 per cent the previous season. The figures for the Antarctic were 84.9 per cent and 91.2 per cent respectively.

Although whaling in the Antarctic thus reveals a decline, these waters still provide the preponderating part of the oil produced—namely, 2,436,338 barrels, as compared with 434,779 outside the Antarctic. The corresponding figures for the preceding season were 2,453,999 and 237,284 barrels. Whaling off the Faroe Islands, Greenland and Newfoundland shows a decline. On the other hand, whaling off the coast of Africa has shown increased figures during the past six seasons.

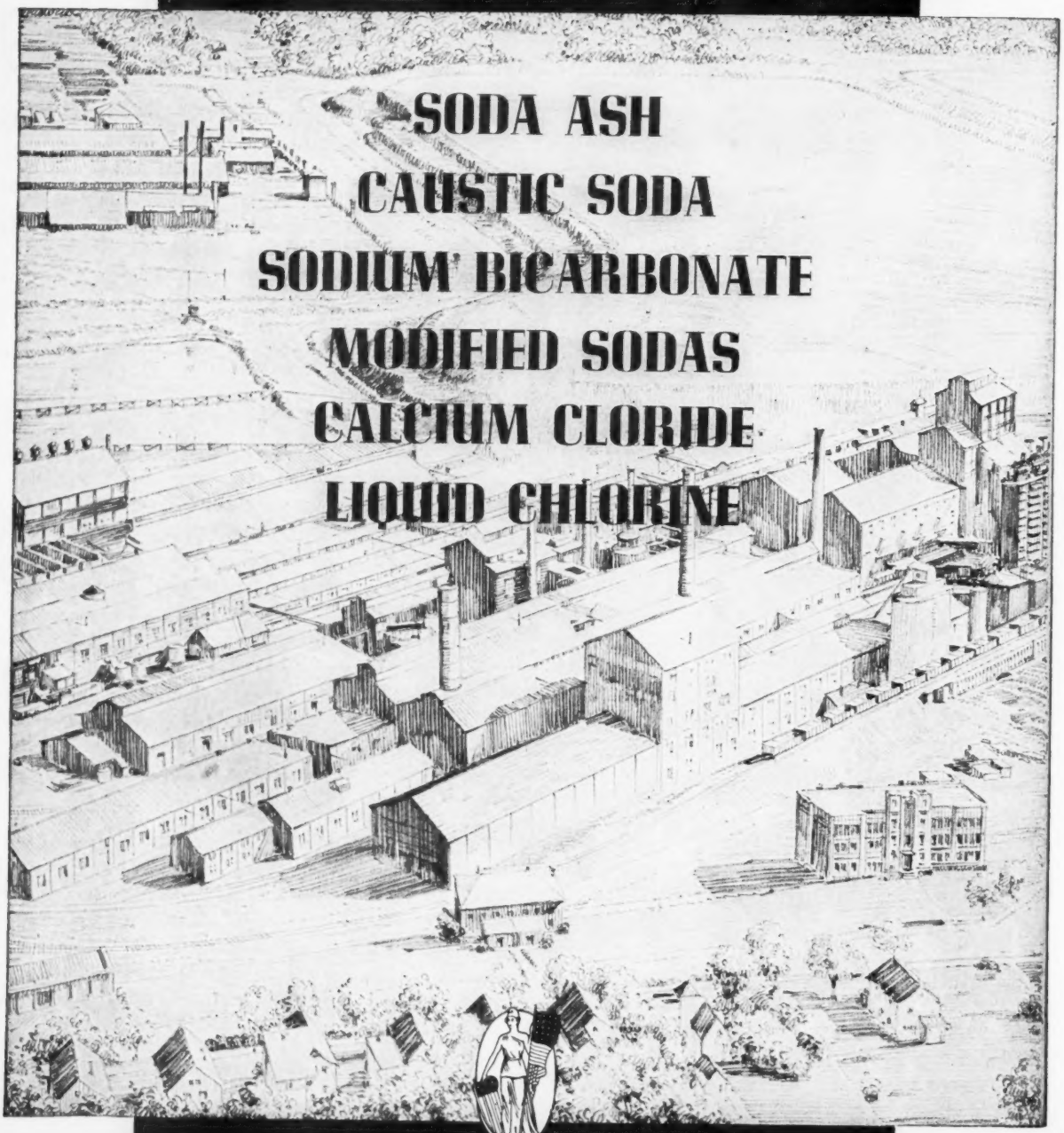
Good Advanced by Woburn

J. E. Good is the new sales manager of Woburn Degreasing Co., Harrison, N. J., manufacturers of fatty acids, succeeding Dr. Eric Schuelke, who resigned early last month. Dr. Schuelke has formed the Colloid Chemical Laboratories, 92 Liberty St., New York, to manufacture specialties for the soap, cosmetic and other industries. Mr. Good was at one time Woburn's purchasing agent.

Cotton Oil Stocks

Stocks of crude cottonseed oil on hand in United States as of July 31, 1937, totaled 9,684,412 lbs., as compared with 19,191,508 lbs. on the same date in 1936.

COLUMBIA



TRADE MARK REG.

THE COLUMBIA ALKALI CORPORATION

BARBERTON • OHIO

NEW YORK BOSTON MINNEAPOLIS
CHICAGO CLEVELAND CINCINNATI
ST LOUIS PITTSBURGH

Foam Bath Products

FOAM bath products are compounded to produce in the tub a thick and reasonably stable layer of dense, perfumed bubbles. Directions usually call for running the bath water directly from the faucet onto the material. The products are primarily surface tension-reducing agents to permit the formation of foam, and also may contain saponin to increase the foaming.

Soap should never be used in conjunction with these products since its effect is to destroy the bubble formation, either partially or wholly, according to the hardness of the water and other variable factors. Triethanolamine soaps as well as sodium and potassium soaps are ruled out of consideration, since all will give a floating scum of calcium soap.

Sodium lauryl sulfate is a suitable base for foam bath powders. By itself it produces a good layer of small, closely knit bubbles that are reasonably stable. Addition of saponin improves the foam, as does also that of sodium alginate. The presence of water-soluble salts may tend to gelatinize this gum, so that such salts should not be included in a formula incorporating the alginate. Sodium lauryl sulfate, saponin, sodium hexametaphosphate and a little powdered gum acacia, produce a thick, uniform stable foam with hot water. Sodium hexametaphosphate is better added to a liquid product than to a powder, owing to its hygroscopicity. Many of the textile wetting agents should prove useful in this type of product.

The following is a suggested formula for a foam producer:

	parts
Sodium lauryl sulfate	40
Soda ash, dried and powdered	55
Saponin	5

Auxiliary products worthy of consideration include soluble starch, powdered tragacanth, pectin, fillers such as magnesium sulfate, salt, sugar, borax and soda ash. These should be selected with an eye to compatability and the pH of the product. If a dyestuff is to be added, a trace of fluorescein may be used. Pine and eucalyptus oils are suitable perfumes, or a light floral or Cologne odor.

The range of potential constituents in liquid foam products is larger than with powdered products. Sulfonated lorol, which contains triethanolamine and sodium lauryl sulfate, gives a profuse, stable foam.

Many users will persist in employing bath soap with these products and will quickly become disappointed in them, unless some substitute provision is made. A soap substitute prepared in cake form resembling soap in appearance, might well be sold in conjunction with the foam producer. Unless something of this nature is achieved, the vogue for foam baths is not apt to be a lasting one, since the prime purpose of any bath is to cleanse thoroughly, and this the modern foam bath does not do by itself. Geoffrey H. Allen. *Soap, Perfumery & Cosmetics* **10,** 576-8, 580 (1937).

At the Soap Kettle

(*From Page* 28)

a maximum and falls to a fraction of this value before any form of salting out occurs; M. Hirose[7], who studied the relationship between the composition and the physical properties of mixed soap solutions as well as of solutions of single soaps such as the sodium salts of palmitic, oleic and lauric acids; A. S. C. Lawrence[8], who reported on the mchanics of the formation of crystals from aqueous soap solutions, ascribing the fibrous form of the colloidal aggregate to the long-chain structure of the fatty acid molecule; also numerous other experimenters.

Some of the more recent publications of McBain and his coworkers have been devoted to determination of the rate of saponification of oils and fats by aqueous alkali through the use of the hydrogen electrode[9] and to the effect upon the rate of saponification of the physical state of the developing soap solution[10].

The purpose herein has been to outline briefly the general trend of research in the physical chemistry of soap. Much of the work done has not yet found practical application, while much of it has served to confirm the technical procedures already in use in the soap industry. There is little doubt that eventually the knowledge gained in this type of "pure" research will become of far greater usefulness to the practical soapmaker than it has been up to the present time.

References:

1. Maclennan, J.S.C.I., 1923, **42**, 393 T.
2. Merklen, Etudes sur la constitution des savons du commerce, Marseilles, 1906.
3. Spring, Bull. Acad. roy. Belg., 1909, **187**, 1128.
4. Hillyer, J. Amer. Chem. Soc., 1903, **25**, 511.
5. McBain, J. Chem. Soc., 1914, **127**, 852.
6. King, J.S.C.I., 1922, **21**, 147 T.
7. Hirosi, J. Soc. Chem. Ind. Japan, 1928, **31**, 156-Ibid-**31**, 160.
8. Lawrence, Kolloid-Z., 1930, **50**, 12-17.
9. McBain, Howes, Thorburn, J. Physical Chem., 1927, **31**, 131.
10. McBain and Kawakami, J. Physical Chem. 1930, **34**, 580.

P & G Leads Soap Advertisers

Procter & Gamble Co. was the leading advertiser among American soap companies during the first half of 1937, and was surpassed in amount spent in the national field only by General Motors Corp. Figures for Procter & Gamble and other leading firms in the soap and household field, as compiled by *Printers' Ink*, are as follows:

	Total	Magazines	Radio	Farm
Procter & Gamble Co.	$3,414,945	$1,293,975	$2,075,219	$45,751
Lever Bros., Co.	2,135,812	962,023	1,133,102	40,687
Colgate-Palmolive-Peet Co.	2,055,182	1,107,201	947,981	.....
Bristol-Myers Co.	1,885,346	1,480,596	377,440	27,310
Sterling Products, Inc.	1,713,444	525,492	1,144,727	43,225
American Home Products Co.	1,420,127	132,340	1,280,137	7,650
Lambert Company	1,081,626	1,043,216	.....	38,410
Pepsodent Co.	1,071,494	451,909	619,585	.....
Jergens-Woodbury	960,898	386,419	574,479	.....
Lehn & Fink Products Co.	889,841	492,176	380,915	16,750

Launching a NEW Soap Product?

Use Modern P. Q. SILICATES

TODAY new soap products are designed for a new world. This is a world of new standards for soaps — quicker cleaning, more exacting results and closer buying. And these standards you can easily meet with P. Q. Silicates.

The P.Q. line has 33 different silicates. Have you looked them over to determine how you can improve quality or lower costs? Complete information on the liquid, solid and powdered P.Q. Silicates is found in Bulletins 171 and 172. Request copies without obligation.

Is your research department working on a new product? Let us discuss with you the use of a different ratio silicate, or one of the dozen powdered grades available from P.Q. Silicate Headquarters.

P.Q. SILICATES OF SODA

PHILADELPHIA QUARTZ CO.

PHILADELPHIA

General Offices and Laboratory: 125 S. Third St., Phila., Pa.
Chicago Sales Office: Engineering Bldg Stocks in 60 cities.
Sold in Canada by National Silicates Ltd., Toronto, Ont.

Works: Anderson, Ind., Baltimore, Md., Chester, Pa., Buffalo, N. Y., Kansas City, Kans., Rahway, N. J., St. Louis, Mo., Utica, Ill.

ESTABLISHED 1831

Send Bulletin No. 1, P.Q. Silicates of Soda in Soapmaking, also No. 171 and 172 on the Properties of Silicate of Soda.

*Name*_____

*Address*_____

*City*_____ *State*_____

PQ

REG. U. S. PAT. OFF.

Contracts Awarded

U. S. Post Office Awards

Harley Soap Co., Philadelphia, has been awarded a contract on a quantity of automobile soap with prices of 5.15c, 4.7c, and 4.45c for delivery to U. S. Post Office, Washington, D. C. R. M. Hollingshead Corp., Camden, N. J., was awarded a contract on a quantity of liquid floor wax at 34.75c a gal.

Camp Beauregard Award

Murphy Products Co., Washington, was recently awarded contract for 500 gals. insecticide at 37c for delivery to quartermaster at Camp Beauregard, Louisiana.

Insecticide Award

In a recent opening by Illinois quartermaster at Fort Sheridan, Sinclair Refining Co., New York, was awarded a contract for 1,500 gals. insecticide at a price of $764.40.

Soap Chip Bids

Low bidders at a recent opening by Washington, D. C., Marine Corps on 2,100 lbs. of soap chip were: John T. Stanley Co., New York, 8.64c; Iowa Soap Co., Camden, N. J., 8.77c, and Sterling Supply Corp., Philadelphia, 8.84c.

Gets Insecticide Award

C. G. W. Wernicke, Minneapolis, was recently awarded a contract on 725 gals. liquid insecticide to be delivered to quartermaster at Fort Snelling, Minnesota.

Fort Sam Houston Award

On a recent opening on 43,560 cans caustic soda by Fort Sam Houston quartermaster, Texas, Buckeye Soda Co., Painesville, O., was awarded the contract at a price of 4.99c per can.

Low Insecticide Bidder

Arthur S. La Pine, Chicago, was low bidder on 150 gals. insecticide with a bid of 56c a gal. at a recent opening by Procurement Div., U. S. Treasury Dept., Washington, D. C.

P & G Profit at Record High

Procter & Gamble Co. reports net earnings of $26,803,340 for the year ended June 30, 1937, the largest in the history of the company. This equals $4.07 a share on the common, after deductions for preferred dividends. The comparative figure for the previous year was $16,138,367, or $2.39 a common share. Gross sales for the year just ended amounted to $229,975,444, against $179,748,056 in the previous year, an increase of $50,227,388, or 27.9 per cent.

Ask Minimum Soap Prices

The Cincinnati Retail Grocers' and Meat Dealers' Association has recently started a drive for minimum resale prices on soaps. One of the first moves in the campaign was a petition to M. Werk Co., requesting this local soap manufacturer to fix a minimum resale price of ten cakes for 46c on "Werk's Tag Soap." The association hoped that once such a minimum level was established, other manufacturers would follow in the upward movement. No comment is available from M. Werk Co. on the proposal.

Fischbeck Appoints Agent

Davis & Davis, Inc., located in the Wrigley Building, Chicago, have been appointed as sales representatives in the Chicago and Milwaukee territory for Charles Fischbeck Co., New York, dealers and importers of essential oils and aromatic chemicals. Colonel Alex M. Davis and his son, Edward Davis, have been well-known in this territory for the past sixteen years. The appointment of Davis & Davis, Inc., as representatives of Charles Fischbeck Co., has made possible the stocking of "Cefco" products in this territory to facilitate deliveries.

AOCS to Meet in Chicago

The annual meeting of the American Oil Chemists Society will be held in Chicago at the Hotel La Salle, October 14 and 15. The first day of the session will be devoted to soap and the second day to oil and soap papers. R. C. Newton of Swift & Co., Chicago, chairman of the local Chicago committee, has announced a bowling tournament the evening of October 14 for the "Amaizo" cup for five man teams. There will be a banquet at Old Heidelburg Inn that night. Arrangements will be made also for those interested in playing golf.

Babbitt Executive Changes

H. W. Flexner, formerly director of advertising of B. T. Babbitt, Inc., New York, has been appointed assistant director of sales. Robert Brenner, formerly merchandising manager, has been appointed advertising and merchandising manager. A newspaper campaign is planned in the fall.

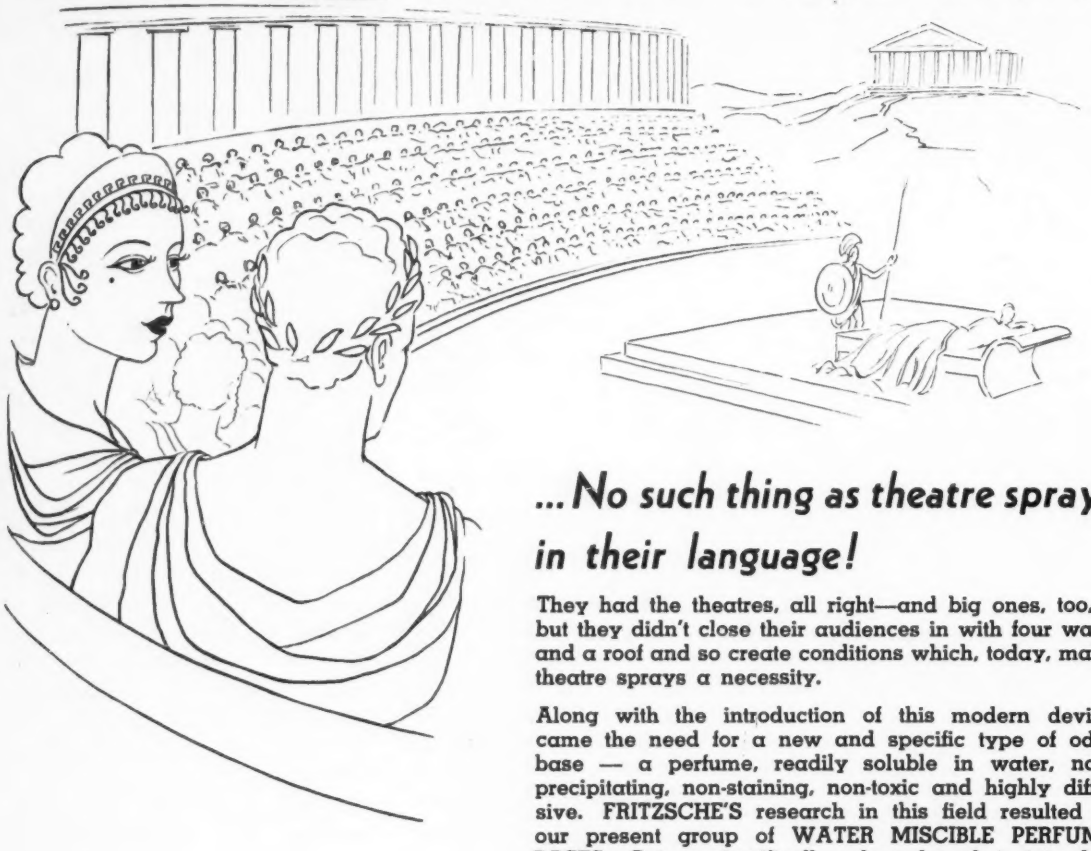
Brillo Mfg. Co. Earnings

Brillo Mfg. Co., New York, reports net profit of $112,487, equal to 60c a share on the common, for the six months ended June 30. This compares with $114,125, or 51c a common share, in the same period last year. For the June quarter the net was $50,148, or 26c a share, as compared with $52,018, or 27c a share, in the June quarter of 1936.

Philip LoBue with Turner

Philip J. LoBue, manager of the New York office of J. T. Baker Chemical Co., Phillipsburg, N. J., for the past eight years, has just joined the sales staff of Joseph Turner & Co., Ridgefield, N. J. Mr. LoBue has had long experience in the chemical sales field, having been with Merck & Co. before going with J. T. Baker. Prior to that he had been with Powers-Weightman-Rosengarten for a number of years.

THE GREEKS HAD NO WORD FOR IT.....



...No such thing as theatre sprays in their language!

They had the theatres, all right—and big ones, too,—but they didn't close their audiences in with four walls and a roof and so create conditions which, today, make theatre sprays a necessity.

Along with the introduction of this modern device came the need for a new and specific type of odor base — a perfume, readily soluble in water, non-precipitating, non-staining, non-toxic and highly diffusive. FRITZSCHE'S research in this field resulted in our present group of WATER MISCIBLE PERFUME BASES. Being scientifically adapted to their intended purpose, they meet all the requirements of a good spray with the further advantage of odor quality unique for this class of product.

FRITZSCHE'S WATER SOLUBLE PERFUMES are enjoying increasing demand and in applications other than originally intended . . . in theatres, offices and homes, and in such products as non-alcoholic lotions, liquid shampoos, greaseless or vanishing creams, wave sets and, yes, embalming fluids! There are more than sixty different odors in this interesting group; write us for details.

FRITZSCHE Brothers, inc.

816 WEST 8TH STREET LOS ANGELES, CAL.
Proprietors of PARFUMERIES de SEILLANS Seillans, France
FRITZSCHE BROTHERS, of Canada, Ltd., 77 79 Jarvis St., Toronto, Canada

PORT AUTHORITY COMMERCE BLDG.
76 NINTH AVENUE, NEW YORK, N. Y.
118 WEST OHIO ST. CHICAGO, ILL.

A *Fritzsche* PRODUCT for EVERY PURPOSE . . .

- **ESSENTIAL OILS**

  Your basic materials should be the finest that modern methods and scientific skill can produce. In using FRITZSCHE'S Essential Oils you are assured matchless purity and dependability.

- **AROMATIC CHEMICALS**

  Large selection and superlative quality characterize the materials in this group. Use them for finer aromatic effects and for greater economy.

- **FIXATIVES**

  We carry a complete line of fixatives, including Rose Crystals, one of the best all-around fixatives, and a new group of Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris—especially adaptable to soap making. Send for literature.

- **ANTI-OXIDANTS**

  These newly developed preservatives for soaps, animal and vegetable fats and oils are highly important to the soap manufacturer. Write us for full details concerning Oxidex.

- **BATH SALT PERFUMES**

  Combining perfume and color, our delightful Bath Perstels greatly simplify and facilitate the process of manufacture. Very economical. Complete information and list of blends will be sent upon request.

- **INSECTICIDES AND DISINFECTANTS**

  All materials offered by us under this heading are the results of years of research applied to this increasingly important phase of perfuming. Selection from the FRITZSCHE catalog assures uniform and unvarying quality of odor.

- **DEODORIZING COMPOUNDS**

  Technical products such as para blocks, naphthalene, cleansers, waxes, polishes, solvents, diluents, etc., require good, dependable deodorizing compounds in their formulae. For effective, low cost coverage we offer and recommend Neutroleum, Safrella, Javollal, Methalate "C", and others. Send for particulars.

- **TOILET SOAP COMPOUNDS**

  Perfumes in this group have been specially prepared to meet the exacting demands of soap manufacture. Exquisite scents at a minimum cost. Consult our catalog.

- **LIQUID SOAP AND SHAMPOO PERFUMES**

  These perfumes are highly soluble and mix readily with liquid soaps. Simple to use; cost limits and strength of odor desired determine quantity required.

- **DENTAL AND ORAL FLAVORS**

  These flavors are of a special character, skillfully blended to impart pleasant, clean, refreshing taste effects. We are prepared also to create special flavor blends according to your specifications and for your exclusive use. Consult us freely.

- **SOAP COLORS**

  We supply soap colors to produce any desired tint. Send us description or sample of color to be matched for our specific recommendations.

SEND FOR TESTING SAMPLES

William Watkins Resigns

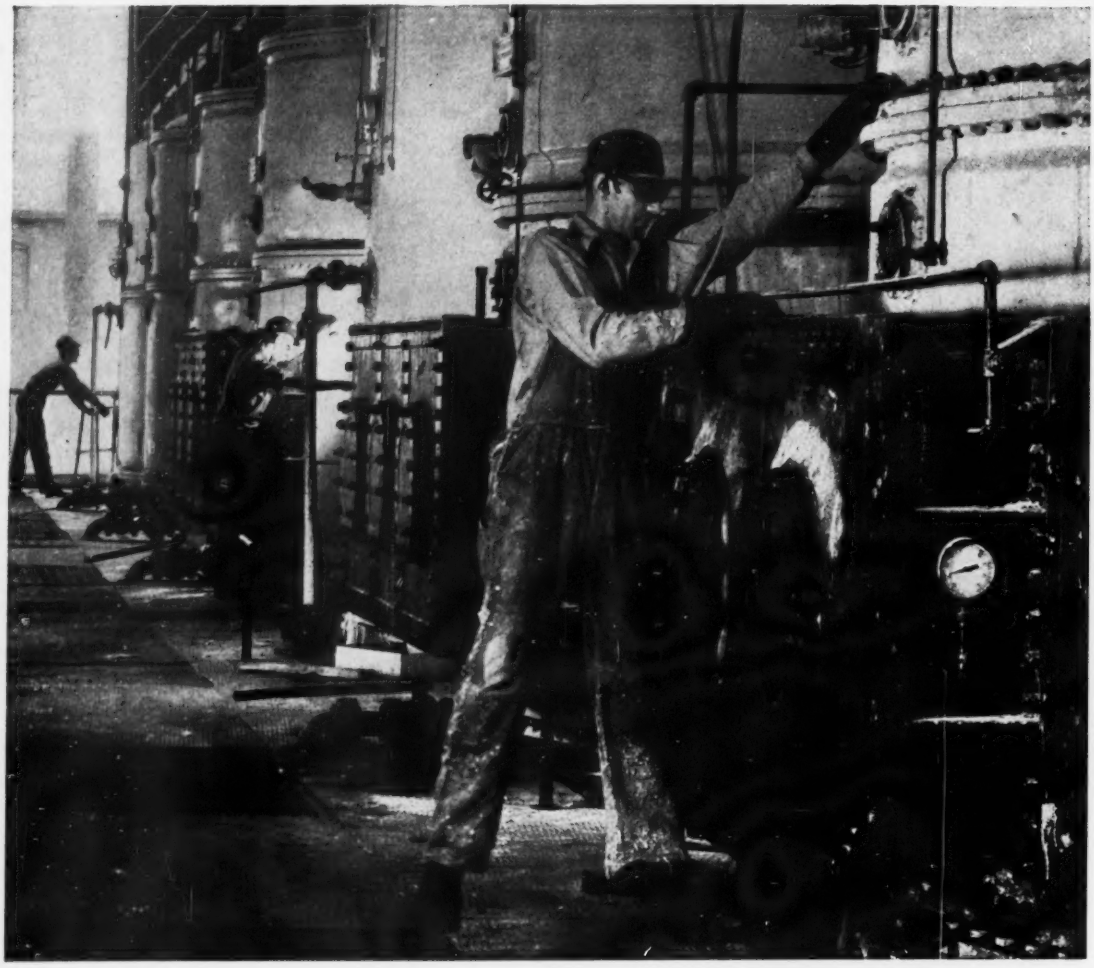
William B. Watkins, for the past twelve years general director of sales, and vice-president of the J. R. Watkins Co., Newark, N. J. and Winona, Minn., recently resigned active connection with that company, and moved his residence from Winona to Winnetka, Ill. Mr. Watkins who has been affiliated with the Watkins firm since 1921, will retain his position as vice-president and a director. His first sales position with the company was in charge of the Pacific Coast territory with headquarters in San Francisco. He became general sales manager in 1925. He was a vice-president and director of the Winona National & Savings Bank, and active in the Methodist Church and religious educational organizations. He was a veteran of the World War. E. L. King is president of the J. R. Watkins Co.

P. J. Kelly Joins Colgate

Phillip J. Kelly, formerly executive vice-president of Harry Latz Service, New York, has joined the soap department of Colgate-Palmolive-Peet Co. as sales promotion manager for "Palmolive" soap.

Laco Acquires Pompeian

Laco Products, Inc., Waltham, Mass., announces the acquisition of Pompeian Co., cosmetic manufacturer, Bloomfield, N. J. Pompeian Co., makers of "Pompeian Massage Cream," facial creams and other beauty preparations, has been a big national advertiser for over forty years. Laco Products, Inc., manufactures and distributes pure olive oil castile soap, olive oil shampoo, sterilized powder, and olive oil—all sold under the "Laco" brand. Merchandising plans for promoting the Pompeian line of cosmetics and beauty preparations are now being formulated. The Joseph Katz Advertising Agency of Baltimore and New York, who handle the advertising for Laco Products, Inc., will also handle the advertising for Pompeian beauty preparations.



PROFITABLE SOAP PRODUCTION

. . . depends to a great extent on the cooperation you get from your sources of supply for working materials. Experienced in the art of cooperation and aware of the important part it plays in putting production on a profitable basis, Niagara works hand in hand with customers in all problems concerning the use of the materials it supplies. This is the service policy behind the high quality of

NIAGARA CAUSTIC SODA

NIAGARA ALKALI COMPANY
EAST 42nd STREET, NEW YORK, N.Y.
Associated with Electro Bleaching Gas Co
Pioneer Manufacturer of Liquid Chlorine

New Trade Marks

The following trade-marks were published in the August issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

ROYAL—This in solid letters describing soap compound. Filed by Royal Chemical Co., Cincinnati, O., Apr. 26, 1937. Claims use since Mar. 1, 1930.

PROPERT'S—This in solid letters with picture of dog's head describing cleaners and polishes. Filed by Salomon & Phillips, New York, May 12, 1937. Claims use since October, 1887.

VANI-SOL—This in solid letters describing cleaner. Filed by National Laboratories, Toledo, O., May 17, 1937. Claims use since May 11, 1937.

WILLIAMS GLIDER — This together with picture of carton describing shaving cream. Filed by J. B. Williams Co., Glastonbury, Conn., June 5, 1937. Claims use since Apr. 23, 1937.

NOXCIDE—This in solid letters describing insecticides and germicides. Filed by Alfagold Co., Dubuque, Iowa, May 15, 1936. Claims use since Mar. 1, 1932.

BLACK WITCH—This together with picture of witch spraying insects describing insecticides. Filed by Ford Hopkins Co., Chicago, July 11, 1936. Claims use since Jan. 1, 1934.

C & G—This in solid letters describing insecticides. Filed by C & G Laboratories, Albany, Ga., Mar. 15, 1937. Claims use since Jan. 1, 1936.

ANTZGO—This in solid letters describing ant killer. Filed by Antzgo Products, Lakewood, O., Mar. 29, 1937. Claims use since Dec. 1, 1936.

SO-CRE-SIL—This in solid letters describing disinfectant and antiseptic. Filed by Socony-Vacuum Oil Co., New York, May 14, 1937. Claims use since Aug. 2, 1935.

MAGNETIC—This in solid letters describing insecticide. Filed by Stauffer Chemical Co. of Texas, New York, May 22, 1937. Claims use since Feb. 3, 1932.

PREVENTA RUN—This together with picture of girl in armor describing washing compound. Filed by Roosevelt & Sustrin, New York, Oct. 22, 1936. Claims use since April, 1935.

TIP TOP—This in outline letters describing shoe polish. Filed by Lincoln Lace & Braid Co., Cranston, R. I., Oct. 27, 1936. Claims use since Oct. 22, 1936.

AN-OUR—This with clock as background describing cleanser. Filed by An-Our Co., Cincinnati, O., Apr. 23, 1937. Claims use since July 1, 1934.

MARCELLE.— This in solid script describing soaps. Filed by C. W. Beggs Sons & Co., Chicago, Apr. 23, 1937. Claims use since Mar. 10, 1937.

FASCINATION — This in script on circular background describing cleanser. Filed by Lundborg Perfumers, New York, Apr. 29, 1937. Claims use since Mar. 14, 1874.

ABUNDA—This in solid letters describing detergent. Filed by Soapless Products Co., New York, May 21, 1937. Claims use since Mar. 20, 1937.

BOLL-WE-EX — This in solid letters describing insecticides. Filed by Boll-We-Ex, Inc., Memphis, Tenn., Oct. 10, 1936. Claims use since Apr. 19, 1924.

USEPTOL—This on dark background describing disinfectant and antiseptic. Filed by United States Drug & Chemical Corp., Malden, Mass., Feb. 12, 1937. Claims use since Jan. 1, 1935.

SPEEDEE—This in solid letters describing insecticides. Filed by X-Termo Products, Chicago, May 17, 1937. Claims use since May 1, 1932.

C B—This together with picture of insect describing antiseptic. Filed by Charles W. Boettcher, Ameret, Mo., May 21, 1937. Claims use since Apr. 21, 1935.

KO-SUL—This in solid letters describing fungicide. Filed by Dye-Col Products, New York, May 21, 1937. Claims use since May 20, 1937.

LECTRO—This in solid letters describing automobile polish. Filed by Black & Decker Mfg. Co., Towson, Md., June 16, 1937. Claims use since Aug. 20, 1936.

CLEANUP MAN—This together with picture of ball player describing soap. Filed by Sugar Beet Products Co., Saginaw, Mich., Feb. 17, 1936. Claims use since Jan. 13, 1936.

BARREL BOWL—This in solid letters describing shaving soap. Filed by Pinaud Inc., New York, June 7, 1937. Claims use since May 26, 1937.

CANTER—This in solid letters describing soap. Filed by Pinaud, Inc., New York, June 7, 1937. Claims use since May 26, 1937.

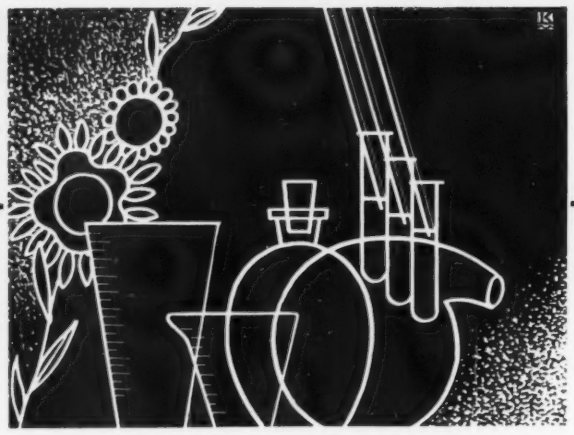
MORNING CANTER — This in solid letters describing soap. Filed by Pinaud, Inc., New York, June 7, 1937. Claims use since May 27, 1937.

KARSMETIK—This in solid letters describing cleanser. Filed by Karsmetik Co., New York, June 17, 1937. Claims use since Sept. 25, 1933.

FISH-DUST—This in solid letters describing insecticide. Filed by Harry G. Hutson, Atlanta, Ga., Feb. 23, 1937. Claims use since Jan. 11, 1937.

SCIENTIFIC 1005 — This in solid letters describing tooth powder. Filed by S. H. Krebs & Co., New York, Apr. 15, 1937. Claims use since Apr. 1, 1937.

SILK E DIP—This on fanciful background describing cleanser. Filed by General Chemical Co., Worcester, Mass., Feb. 4, 1936. Claims use since Jan. 26, 1935.



Schimmel Compound Service

The successful blending of the many complicated ingredients of a soap perfume demands experience and knowledge.

Our perfume chemists possess both, acquired through many years of compound work, achieving a skill unparalleled in the industry.

This competent workmanship is at your service. Ask us for suggestions for successful perfumes or let us work out compounds of any type you wish.

SCHIMMEL & CO., Inc.

601 WEST 26th STREET, NEW YORK, N. Y.

BOSTON . . CHICAGO . . LOS ANGELES . . TORONTO

P. S.—This in solid letters describing cleanser. Filed by Puritan Soap Co., Rochester, N. Y., Jan. 18, 1937. Claims use since Jan. 30, 1935.

VEL—This in solid letters describing detergent. Filed by Colgate-Palmolive-Peet Co. Jersey City, N. J., June 23, 1937. Claims use since June 15, 1937.

SET-UP—This in solid letters describing soap. Filed by Pinaud, Inc., New York, June 28, 1937. Claims use since June 15, 1937.

WAKE-UP—This in solid letters describing soap. Filed by Pinaud, Inc., New York, June 28, 1937. Claims use since June 15, 1937.

DEVIL DUST—This with dust cloud as background describing insecticide. Filed by Ridge Tool Co., North Ridgeville, O., May 10, 1937. Claims use since May 1, 1937.

KO SURO—This in solid letters describing insecticides. Filed by Dye-Col Products, New York, June 11, 1937. Claims use since June 1, 1937.

ZECOL—This in raised letters describing cleaning wax. Filed by L. J. Sauerborn, Milwaukee, Wis., May 26, 1937. Claims use since Aug. 1, 1932.

WHITE WONDER — This in solid letters describing soap flakes. Filed by John Hanser Soap Co., Milwaukee, Wis., June 30, 1934. Claims use since 1919.

SPEED—This in black and white describing metal polish. Filed by Midway Chemical Co., Chicago, Nov. 30, 1936. Claims use since Nov. 30, 1932.

DRESINATE—This on stencil describing rosin soap. Filed by Hercules Powder Co., Wilmington, Del., May 6, 1937. Claims use since Apr. 14, 1937.

AIR CONDITIONING THE HUMAN BODY—This in solid letters describing soaps. Filed by Air Conditioned Fabrics Corp., New York, June 8, 1937. Claims use since March, 1935.

VOL—This in solid letters describing disinfectant and antiseptic. Filed by Wm. S. Merrell Co., Reading, O., June 10, 1937. Claims use since May 25, 1937.

KEK—This in solid letters describing boiler cleaner. Filed by Kenite Laboratory, New York, July 3, 1937. Claims use since June 29, 1937.

Trade Marks Granted

348,455. Soap. Benjamin Mayer, Brooklyn, N. Y. Filed February 23, 1937. Serial No. 389,259. Published May 18, 1937. Class 4.

348,468. Germicide. Rexair, Inc., Detroit, Mich. Filed March 1, 1937. Serial No. 389,528. Published May 11, 1937. Class 6.

348,540. Flushing Powder. Derris, Inc., New York. Filed April 2, 1937. Serial No. 390,844. Published May 18, 1937. Class 4.

348,571. Insecticides and Rodent Exterminator. Charles Menard, doing business as National Pest-Patrol Products, San Francisco, Calif. Filed March 16, 1936. Serial No. 376,058. Published May 25, 1937. Class 6.

348,579. Laundry Soap. West Coast Soap Co., Oakland, Calif. Filed July 18, 1936. Serial No. 381,180. Published March 23, 1937. Class 4.

348,595. Detergents. Noskrape Laboratories, Inc., Chicago. Filed October 12, 1936. Serial No. 384,265. Published May 25, 1937. Class 4.

348,625. Deodorant and Disinfectant. Products, Inc., Columbus, Ohio. Filed March 1, 1937. Serial No. 389,525. Published May 18, 1937. Class 6.

348,684. Tooth Powder. H. P. Carr and Co., New York. Filed March 29, 1937. Serial No. 390,624. Published May 18, 1937. Class 6.

348,686. Antiseptic Preparations. Duray Laboratories, Inc., Seattle, Wash. Filed March 29, 1937. Serial No. 390,639. Published May 18, 1937. Class 6.

348,725. Wall Paper Cleaner. Cleveland Cleaner and Paste Co., Cleveland, Ohio. Filed March 22, 1937. Serial No. 390,356. Published May 25, 1937. Class 4.

348,726. Cleaning Preparation. Miller Products, Attica, Ind. Filed March 24, 1937. Serial No. 390,463. Published May 25, 1937. Class 4.

348,742. Polishing Wax. Puritan Soap Co., Rochester, N. Y. Filed April 15, 1937. Serial No. 391,397. Published May 25, 1937. Class 16.

348,787. Cleaning Preparation. Jacob H. Simon, Clor-O-Clean Chemical Co., Chicago. Filed December 23, 1936. Serial No. 387,092. Published June 1, 1937. Class 4.

348,788. Cleaning Preparations. Turco Products, Los Angeles. Filed January 2, 1937. Serial No. 387,409. Published June 1, 1937. Class 4.

348,801. Cleaning Preparation. Paragon Oil Co., Brooklyn, N. Y. Filed March 18, 1937. Serial No. 390,236. Published June 1, 1937. Class 4.

349,006. Insecticides. Stanco Inc., New York. Filed March 19, 1937. Serial No. 390,283. Published May 25, 1937. Class 6.

349,113. Waxes. Cavendish Trading Corp., New York. Filed April 22, 1937. Serial No. 391,686. Published June 8, 1937. Class 16.

349,170. Wax Polish. S. C. Johnson & Son, Racine, Wis. Filed June 10, 1936. Serial No. 379,523. Published June 15, 1937. Class 16.

349,196. Insecticide. Delafield Nurseries, Aspinwall, Pa. Filed December 7, 1936. Serial No. 386,435. Published June 15, 1937. Class 6.

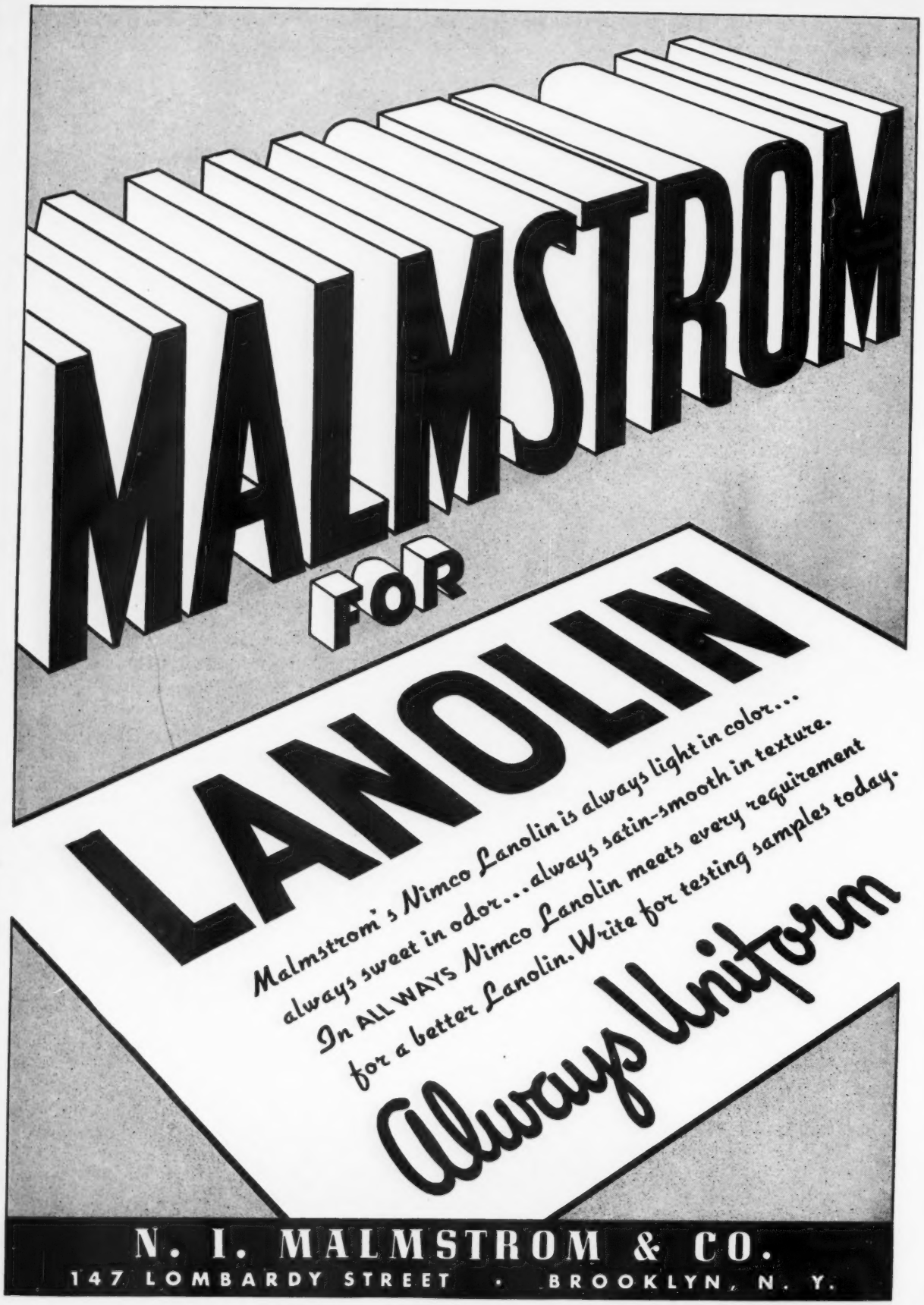
349,278. Cleaning Compounds. Tex-Ite Products Corp., Brooklyn, N. Y. Filed March 26, 1937. Serial No. 390,567. Published June 15, 1937. Class 4.

349,306—Insecticides. Hammond Paint & Chemical Co., Beacon, N. Y. Filed April 3, 1937. Serial No. 390,916. Published June 8, 1937. Class 6.

349,331. Soaps. Kerk Guild, Inc., Whitesboro, N. Y. Filed April 8, 1937. Serial No. 391,074. Published June 15, 1937. Class 4.

349,332. Soaps. Kerk Guild, Inc., Whitesboro, N. Y. Filed April 8, 1937. Serial No. 391,075. Published June 15, 1937. Class 4.

349,339. Deodorant and Disinfectant. Claire Manufacturing Co., Chicago. Filed April 9, 1937. Serial No. 391,112. Published June 15, 1937. Class 6.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Malmstrom's Nimco Lanolin is always light in color... always sweet in odor... always satin-smooth in texture. In ALL WAYS Nimco Lanolin meets every requirement for a better Lanolin. Write for testing samples today.
Always Uniform
N. I. MALMSTROM & CO.
147 LOMBARDY STREET • BROOKLYN, N. Y.

Raw Material Markets

(As of August 27, 1937)

NEW YORK — Prices of soapmaking fats and oils resumed their downward trend this period, and broke through to their lowest levels of the year. The decline is traceable to the increased production of domestic fats such as lard and cottonseed oil. With big stocks of both expected to reach the market from the current crop, oil and fat buyers have been distinctly backward about making commitments. This tendency of buyers to postpone purchases has added to the price decline in the oil and fat group over recent months. The only contrast in the present situation is offered by the drying oil group. With future arrivals of chinawood and perilla oils made uncertain by the warfare in China, prices of both oils have advanced sharply and have given strength to the quotations on other drying oils such as linseed.

In the perfuming material market the most important developments were traceable to war influences. Anise oil is sharply higher and cassia oil is very firm as a result of the Japanese-Chinese conflict. Both oils come from southern Chinese ports, which are as yet unaffected, but it is feared that further extension of the war area or establishment of an effective Japanese blockade might interfere with future shipments.

OILS AND FATS

Coconut Oil

Coconut oil broke through to a new low for the year this period, with New York tanks of Manila oil falling to 4¾c. On the west coast the quotation was 4¼c.

Grease

With lard and tallow easing off, greases also moved to lower levels. At the close, the current figure on house and yellow grease was 7⅜c.

Cottonseed Oil

The latest government crop report indicates a production of 15,593,000 bales of cotton this year, a substantial increase from last season's production of 12,399,000 bales. This would result in an increase of approximately 25 per cent in cottonseed oil production as compared with 1936 figures. When it is considered also that the carryover into the new season which opened August 1 was 1,252,500 bbls. of oil, as compared with 856,300 bbls. a year ago, it is apparent that there will be a substantial surplus of cottonseed oil for some time to come. This excess stock is one of the important factors responsible for the recent decline in oil and fat prices.

Tallow

The tallow market moved lower this period in line with quotations on other competing products. The price of city extra dropped almost a cent a pound, reaching 7⅝c before any interest was exhibited on the part of buyers. The futures market was quiet, with prices lower.

PERFUMING MATERIALS

Anise Oil

Anise oil quotations advanced sharply in the local market this period, as increasing hostilities in China created practically a nominal market there. Most of this oil is normally shipped from ports in southern China, as yet unaffected by the war, but there is always the possibility that future shipments may be cut off at any time by the spread of hostilities.

Citronella Oil

Java oil moved sharply higher this period, as quotations in the primary market advanced. The current level in the local market is 47 to 50c per lb., with Ceylon oil still holding at 40 to 42c.

Eucalyptus Oil

The only decline in the essential oil market this period was a one-cent drop in the price of eucalyptus, bringing the current quotation down to a low of 45c.

Rosemary Oil

With an extremely uncertain situation still prevailing as to future supplies of Spanish rosemary oil, quotations were advanced a cent a pound this period. The bottom quotation on tins is now 56c, with drums 5c per lb. lower.

MISCELLANEOUS

Rosin

Rosin quotations moved within narrow limits this period in a quiet market. Buying interest has quieted down recently, both for domestic and foreign account. It is reported, however, that buyers in the soap trade have taken substantial stocks for future delivery.

Laundry Owners Meet Oct. 3-7

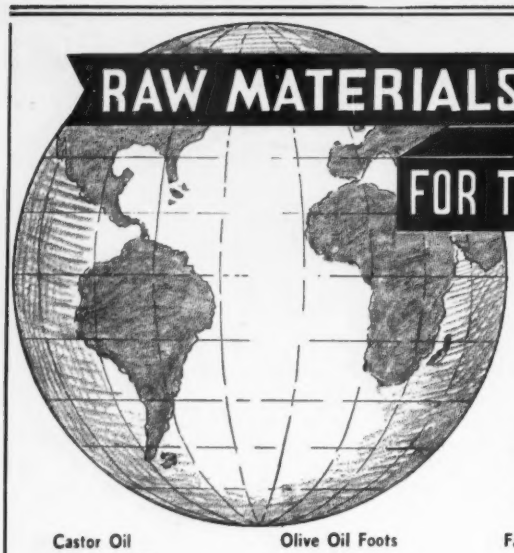
The annual meeting of the Laundry Owners National Association will be held in Cleveland, October 3rd to 7th.

Elkay Products Co. Moving

Elkay Products Corp., formerly located at 542 First Ave., New York, planned to move to new and larger quarters at 323 West 16th St. about September 1.

Soap Employment Index

The index of employment in the soap industry, as compiled by the U. S. Dept. of Labor, registered 103.6 for June, 1937, as compared with 103.3 in May and 96.3 for June, 1936. These figures are all based on the average for the three year period 1923-1925 taken as 100. The pay-roll index for June, 1937, was 116.3, as compared with 113.8 for May and 94.9 for June, 1936.



RAW MATERIALS
FOR THE SOAP INDUSTRY
FROM ALL PARTS OF THE WORLD

OILS FATS
CHEMICALS
FATTY ACIDS

YOU cannot control the weather but you can control the standard of your raw materials by buying from a house which has supplied the best to the trade for nearly a century. Having supplied the Soap and Cosmetic industry from its infancy, we solicit orders for your requirements of tested and reliable raw material.

Castor Oil
Cocoanut Oil
Corn Oil
Cottonseed Oil
Palm Oil
Palm Kernel Oil
Olive Oil
Olive Oil Foots
Peanut Oil
Perilla Oil
Rapeseed Oil
Sesame Oil
Soya Bean Oil
Teaseed Oil
Fatty Acids
Lard Oils
Neatsfoot Oil
Oleo Stearine
Stearic Acid
White Olein
Tallow
Grease
Lanolin
Caustic Soda
Soda Ash
Caustic Potash
Carbonate Potash
Sal Soda
Modified Soda
Silicate Soda
Metasilicate
Tri Sodium Phosphate
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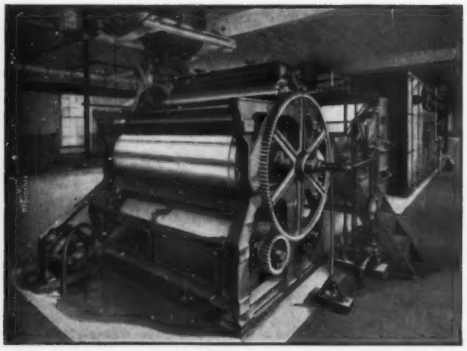
Chlorphyll
"CEREPS" Superfatting Agent

WELCH, HOLME & CLARK CO., Inc.
563 GREENWICH STREET, NEW YORK CITY
ESTABLISHED 1838

PRODUCING THE PERFECT CHIP
FOR ALL SOAP MAKING NEEDS



● New Type Proctor Chip Soap System producing extremely thin chips of textile soap in new plant of Original Bradford Soap Co., River Point, R. I.

● The New Proctor Chip Soap System produces the thinnest of chips . . . chips perfectly formed in long ribbons, evenly thin from edge to edge, uniformly dried free from hard overdried particles or underdried spots. These chips make cleaner, whiter, quicker-dissolving laundry flakes. They make smooth-surfaced, clear-colored toilet cakes. They give quicker, better milling and plodding. They give quicker, easier grinding into powdered soaps . . . with less loss in dust. New high speed chilling roll . . . spray-cooled, pump-drained, precision-ground, smooth-surfaced. New drying machine . . . with revolutionary improvements in principal details of design . . . more efficient, more economical, cleaner in operation. Write for your copy of our new descriptive Bulletin No. 72.

PROCTOR & SCHWARTZ, INC.
• SEVENTH ST. & TABOR ROAD PHILADELPHIA •

Raw Material Prices

(As of August 27, 1937)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .06	$ .06½
Acid. Boric, bbls., 99½%	ton	95.00	100.00
Cresylic, drums	gal.	.89	.93
Low boiling grade	gal.	.92	.96
Oxalic, bbls.	lb.	.11½	.12¼
Adeps Lanae, hydrous, bbls.	lb.	.16	.18
Anhydrous, bbls.	lb.	.17	.19
Alcohol, Ethyl, U. S. P., bbls.	gal.	4.14	4.19
Complete Denat., SD 1, drums, ex.	gal.	.32	.37
Alum. Potash lump	lb.	.03½	.03¾
Ammonia Water, 26°, tanks, dlvd.	lb.	.05	.05¼
Ammonium Carbonate, tech., bbls	lb.	.08	.12½
Bentonite 1	ton	—	16.00
Bentonite 2	ton	—	11.00
Bleaching Powder, drums	100 lb.	2.25	2.60
Borax, pd., cryst., bbls., kegs	ton	47.00	67.00
Carbon Tetrachloride, car lots	lb.	—	.05¼
Caustic, see Soda Caustic, Potash Caustic			
L. C. L.	lb.	.07	.08
China Clay, filler	ton	10.00	25.00
Cresol, U. S. P., drums	lb.	.12	.12½
Creosote Oil	gal.	.13½	.14
Feldspar (200 to 325 mesh)	ton	14.00	15.00
Formaldehyde, bbls.	lb.	.05¾	.06¼
Fullers Earth	ton	15.00	24.00
Glycerine, C. P., drums	lb.	.21½	.22
Dynamite, drums	lb.	.21½	.22
Saponification, drums	lb.	.16	.16½
Soap, lye, drums	lb.	.14½	.15
Hexalin, drums	lb.	—	.30
Kieselguhr, bags	ton	—	35.00
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	1.70	2.20
Mercury Bichloride, kegs	lb.	.71	.76
Naphthalene, ref. flakes, bbls.	lb.	.07¼	.07½
Nitrobenzene (Myrbane) drums	lb.	.09	.11
Paradichlorbenzene, bbls., kegs	lb.	.16	.25
Petrolatum, bbls. (as to color)	lb.	.02	.07¼
Phenol, (Carbolic Acid), drums	lb.	.13¼	.14¼
Pine Oil, bbls.	gal.	.70	.85
Potash, Caustic, drums	lb.	.06¼	.06½
Flake	lb.	.07	.07¼
Potassium Carbonate, solid	lb.	.07¼	.09½
Liquid	lb.	.03½	.03¾
Pumice Stone, powder	100 lb.	3.00	4.00
Rosins (600 lb. bbls. gross for net)—			
Grade B to H, basis 280 lbs.	bbl.	8.85	9.27
Grade K to N	bbl.	9.27	9.35
Grade WG and X	bbl.	9.45	10.10
Wood FF Spot	bbl.	8.56	9.65
Rotten Stone, pwd. bbls.	lb.	.02½	.04½
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04⅜
Olive Castile, bars	lb.	.26	.35
Olive Castile, powder	lb.	.28	.38
Powdered White, Neutral	lb.	.19½	.21½
Olive Oil Foot, bars, 68-70%	lb.	.09	.09½
Green, U. S. P.	lb.	.08	.09½
Tallow Chips, 88%	lb.	.09	.09½
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.23	1.50
Car lots, in bulk	100 lb.	—	1.05
Soda Caustic, cont., wks., solid	100 lb.	—	2.60
Flake	100 lb.	—	3.00
Liquid, tanks	100 lb.	—	2.25
Soda Sal., bbls.	100 lb.	$1.10	$1.30
Sodium Chloride (Salt)	ton	11.40	14.00
Sodium Fluoride, bbls.	lb.	.07¼	.08¾
Sodium Hydrosulphite, bbls.	lb.	.19	.20
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.35	1.75
Tar Acid Oils, 15-25%	gal.	.22½	.30½
Triethanolamine	lb.	.20	.25
Trisodium Phosphate, bags, bbls.	lb.	.03	.03½
Zinc Oxide, lead free	lb.	.06	.06¼
Zinc Stearate, bbls.	lb.	.20	.22

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.08	.08¼
Castor, No. 1, bbls.	lb.	.10¾	.11½
No. 3, bbls.	lb.	.10¼	.11
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.04¾	—
Tanks, Pacific coast, futures	lb.	.04¼	—
Cod, Newfoundland, bbls.	gal.	.52	Nom.
Copra, bulk, coast	lb.	—	.0270
Corn, tanks, mills	lb.	.07¾	Nom.
Cottonseed, crude, tanks, mill	lb.	—	.07
PSY, futures	lb.	.08	.08¼
Degras, Amer., bbls.	lb.	.08	Nom.
English, bbls.	lb.	.08	Nom.
Neutral, bbls.	lb.	.12¼	Nom.
Greases, choice white bbls., fob Chicago	lb.	.08	.08⅝
Yellow	lb.	.07⅜	.07⅝
House	lb.	.07⅜	.07⅝
Lard, City	lb.	.12½	.12¾
Compound tierces	lb.	.11½	.11¾
Lard Oil,			
Extra, bbls.	lb.	—	.12¾
Extra, No. 1, bbls.	lb.	—	.12
No. 2, bbls.	lb.	—	.11½
Linseed, raw, bbls.	lb.	.1100	.1140
Tanks, raw	lb.	—	.1040
Boiled, 5 bbl. lots	lb.	.1220	1240
Menhaden, crude, tanks, Balt.	gal.	.40	Nom.
Oiticica Oil, tanks	lb.	.12½	Nom.
Oleo Oil, No. 1, bbls., N. Y.	lb.	—	.13
No. 2, bbls., N. Y.	lb.	—	.12¼
Olive, denatured, bbls., N. Y.	gal.	1.35	Nom.
Foots, bbls., N. Y.	lb.	.11	Nom.
Palm, shipment	lb.	.04½	Nom.
Palm Kernel, shipment	lb.	.05¼	Nom.
Peanut, domestic, tanks	lb.	.07¾	Nom.
Rapeseed Oil, denat.	gal.	.96	.98
Red Oil, distilled, bbls.	lb.	.11⅝	.12⅝
Saponified, bbls.	lb.	.11⅝	.12⅝
Tanks	lb.	—	.10¾
Sesame Oil, dms.	lb.	.11½	Nom.
Soya Bean, domestic tanks, saponified, f.o.b. West	lb.	.08½	—
Stearic Acid,			
Double pressed	lb.	.12½	.13½
Triple pressed, bgs.	lb.	.15¼	.16¼
Stearine, oleo, bbls.	lb.	.09½	.09¾
Tallow, special, f.o.b. plant	lb.	—	.07½
City, ex. loose, f.o.b. plant	lb.	—	.07⅝
Tallow oils, acidless, tanks, N. Y.	lb.	—	.11½
Bbls., c/1 N. Y.	lb.	—	.12
Teaseed Oil, crude	lb.	.09¼	.09½
Whale, refined	lb.	.1010	.1030

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GLYCERINE
METASILICATE
OXALIC ACID
POTASSIUM CARBONATE
SAL AMMONIAC
SALT
SAL SODA
SILICATE OF SODA
SODA ASH
TRISODIUM PHOSPHATE

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COCOANUT OIL
CORN OIL
COTTONSEED OIL
LARD OIL
NEATSFOOT OIL
OLEIC ACID -RED OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
RAPESEED OIL
ROSIN
SALAD OIL
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Almond, Bitter, U.S.P.	lb.	$2.75	$3.00
Bitter, F. F. P. A.	lb.	3.00	3.25
Sweet, cans	lb.	.95	1.00
Anise, cans, U. S. P.	lb.	.80	.85
Bay tins		1.35	1.50
Bergamot, coppers	lb.	3.70	4.00
Artificial	lb.	1.25	1.40
Birch Tar, rect. tins	lb.	.70	.75
Crude, tins	lb.	.14	.17
Bois de Rose, Brazilian	lb.	1.25	1.35
Cayenne	lb.	2.75	3.00
Cade, cans	lb.	.38	.52
Cajeput, native, tins	lb.	.56	.57
Calamus, tins	lb.	3.00	3.50
Camphor, Sassy, drums	lb.	.16	.17
White, drums	lb.	.18	.19
Cananga, native, tins	lb.	1.75	2.25
Rectified, tins	lb.	3.00	3.35
Caraway Seed	lb.	2.10	2.25
Cassia, Redistilled, U. S. P.	lb.	1.00	1.05
Cedar Leaf, tins	lb.	.95	1.10
Cedar Wood, light, drums	lb.	.26	.30
Citronella, Java, drums	lb.	.47	.50
Citronella, Ceylon, drums	lb.	.40	.42
Clove, U. S. P., tins	lb.	1.15	1.17
Eucalyptus, Austl., U. S. P. cans	lb.	.45	.54
Fennel, U. S. P., tins	lb.	1.20	1.30
Geranium, African, cans	lb.	4.00	4.75
Bourbon, tins	lb.	3.75	4.00
Turkish	lb.	2.90	3.00
Hemlock, tins	lb.	1.05	1.10
Lavender, U. S. P., tins	lb.	2.25	6.00
Spike, Spanish, cans	lb.	1.05	1.10
Lemon, Ital., U. S. P.	lb.	3.50	3.75
Cal.	lb.	2.75	—
Lemongrass, native, cans	lb.	.40	.50
Linaloe, Mex., cases	lb.	1.15	1.20
Nutmeg, U. S. P., tins	lb.	1.25	1.30
Orange, Sweet, W. Ind., tins	lb.	2.10	2.20
Italian cop	lb.	3.00	4.10
Distilled	lb.	—	.90
Cal.	lb.	2.50	—
Origanum, cans, tech	lb.	1.00	1.25
Palmarosa	lb.	3.10	3.20
Patchouli	lb.	5.00	8.00
Pennyroyal, dom.	lb.	1.65	1.75
Imported	lb.	1.50	1.60
Peppermint, nat., cans	lb.	2.55	2.80
Redis., U. S. P., cans	lb.	2.85	3.10
Petitgrain, S. A., tins	lb.	1.10	1.20
Pine Needle, Siberian	lb.	1.00	1.05
Rose, Natural	oz.	5.25	22.50
Artificial	oz.	2.00	3.00
Rosemary, Spanish, tins	lb.	.56	.75
drums	lb.	.51	.55
Sandalwood, E. Ind., U. S. P.	lb.	4.80	5.50
Sassafras, U. S. P.	lb.	.90	1.05
Artificial, drums	lb.	.39	.40
Spearmint, U. S. P.	lb.	2.00	2.05
Thyme, red, U. S. P.	lb.	.95	1.25
White, U. S. P.	lb.	1.05	1.35
Vetivert, Bourbon	lb.	9.00	18.00
Ylang Ylang, Bourbon	lb.	3.50	6.00

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.25	$2.25
Amyl Cinnamic Aldehyde	lb.	1.55	2.00
Anethol	lb.	1.15	1.20
Benzaldehyde, tech.	lb.	.60	.65
U. S. P.	lb.	1.20	1.30
Benzyl, Acetate	lb.	.55	1.00
Alcohol	lb.	.65	1.15
Citral	lb.	1.70	3.15
Citronellal	lb.	1.10	1.25
Citronellol	lb.	1.90	2.15
Citronellyl Acetate	lb.	4.50	7.00
Coumarin	lb.	3.10	3.30
Cymene, drums	gal.	.90	1.25
Diphenyl oxide		.70	1.00
Eucalyptol, U. S. P.	lb.	.58	.60
Eugenol, U. S. P.	lb.	2.00	2.50
Geraniol, Domestic	lb.	.75	2.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	2.00	2.50
Heliotropin	lb.	2.00	2.10
Hydroxycitronellal	lb.	3.50	9.00
Indol, C. P.	oz.	2.00	2.50
Ionone	lb.	3.25	5.50
Iso-Eugenol	lb.	3.00	4.25
Linalool	lb.	1.65	2.25
Linalyl Acetate	lb.	1.70	2.55
Menthol	lb.	3.50	3.60
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.10	2.75
Paracresol	lb.	4.50	6.00
Salicylate, U. S. P.	lb.	.40	.45
Musk Ambrette	lb.	4.20	5.00
Ketone	lb.	4.35	5.25
Xylene	lb.	1.25	2.00
Phenylacetaldehyde	lb.	4.80	8.00
Phenylacetic Acid, 1 lb., bot.	lb.	2.50	3.25
Phenylethyl Alcohol, 1 lb. bot.	lb.	4.00	4.50
Rhodinol	lb.	5.75	8.00
Safrol	lb.	.47	.50
Terpineol, C. P., 1,000 lb. drs.	lb.	.23	.25
Cans	lb.	.27	.30
Terpinyl Acetate, 25 lb. cans	lb.	.80	1.00
Thymol, U. S. P.	lb.	1.70	1.95
Vanillin, U. S. P.	lb.	3.75	4.00
Yara Yara	lb.	1.30	2.00

Insecticide Materials

Insect Powder, bbls.	lb.	.18	.20
Concentrated Extract			
5 to 1	gal.	1.30	1.40
20 to 1	gal.	4.75	5.25
30 to 1	gal.	6.90	7.50
Derris, powder—4%	lb.	.33	.38
Derris, powder—5%	lb.	.39	.44
Cube, powder—4%	lb.	.23	.28
Cube, powder—5%	lb.	.28	.33

Gums

Arabic, Amb. Sts.	lb.	.13	.13½
White, powdered	lb.	.16½	.17
Karaya, powdered No. 1	lb.	.12	.13
Tragacanth, Aleppo, No. 1	lb.	2.75	3.00
Flake	lb.	.50	1.00

Waxes

Bees, white	lb.	.40	.42
African, bgs.	lb.	.27½	.28½
Refined, yel.	lb.	.35	.39
Candelilla, bgs.	lb.	.14½	.15
Carnauba, No. 1	lb.	.47½	.48
No. 2, N. C.	lb.	.41½	.42
No. 3, chalky	lb.	.39	.40
Ceresin, yellow	lb.	.08½	.11
Paraffin ref. 125-130	lb.	.0455	.04¾

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries*.

Preservation of Toilet Soaps

SEVERAL kinds of products are added to soap to prevent rancidity development and promote stability. Preservative agents for this purpose should meet the following requirements:

1. The color of the soap and odor of the perfume should not be injured or changed by the additions.

2. The lathering power of the soap should be decreased as little as possible.

3. Added materials should not make the soap hard nor brittle.

4. The price of the conserving agent should not be out of proportion to the cost of toilet soap.

5. The preserving agent should not be poisonous and should undergo no chemical action with sodium salts of fatty acids.

With the exception of point 4, most of the agents in use meet these requirements.

Perhaps the most used stabilizer for toilet soaps is sodium thiosulfate, which dissolves freely in water; 100 parts of cold water dissolve 102 parts of sodium thiosulfate. This salt must itself be used with protective agents, since otherwise a dark color and nonhomogeneity may develop in the soap. The salt can be prepared in a suitable fat base which will protect it and not detract from its favorable action in soap. Its preparation is as follows:

		Parts by weight
1.	Anhydrous lanoline	690
	Solid paraffin, m. 52-4°C.	314
	Bleached beeswax	200
	Liquid paraffin oil	390
2.	Water, boiling	200
	Borax, powdered	16
3.	Sodium thiosulfate, in bead form	600
	Water	200
4.	Waterglass	390

The fats are melted together and then solution 2 added while boiling hot and stirred in well. The mass swells up at this point. Remove the source of heat, mix thoroughly and let cool partially. Warm solution 3 and add to the above mixture, stirring until the added solution is entirely taken up. Finally mix in the waterglass. The final mass is salve-like and should be homogeneous. One per cent of this is mixed with dry soap chips in a mixing machine. The preservative agent so prepared is an effective stabilizer and does not deteriorate itself.

According to German Patent No. 512,428 oxidation of soap is prevented by admixture with ammonium thiosulfate and at the same time lather formation is favorably influenced. Instead of ammonium thiosulfate, sodium thiosulfate and ammonium carbonate may be used.

An addition of 0.2 per cent of stannous chloride makes a very effective preservative for toilet soap. This salt has been used for some time as a bleaching agent for toilet soap. As a preservative it is used in the form of a solution of 35 parts of crystalline stannous chloride in 25 parts of hot water, which is added to soap chips in the crutcher. The hot water is slowly and gradually added to the salt and after solution is complete, it is filtered. This solution must be prepared just before use.

Numerous patents provide for the use of various stabilizing agents. Among others which might be mentioned is U. S. Patent No. 1,672,675, in which a condensation product is described of an aromatic amine such as analine with an aldehyde such as acetaldehyde. U. S. Patent No. 186,469 provides for the addition of 0.05-1 per cent of an aminosulfonic acid or carbonxylic acid to soap, e.g., sulfanilic acid, naphthionic acid, aminobenzoic acid or the corresponding sodium salts.

According to French Patent No. 760,789, an addition of the sodium derivative of *p*-toluene chloroamide is made to soap. The commercial product is called *Aktivin*. It is mixed with the cooled soap while the latter is still fluid.

German Patent No. 619,928 mentions halogenated hydrocarbons as protective against rancidity development in oils, fats, waxes, soap, etc. According to this patent, 100

parts by weight of dried soap chips are suitably mixed, after addition of perfume and color, with 1.5 parts by weight of chlorinated paraffin having a chlorine content of about 40 per cent. The same chlorinated paraffin may be used in a proportion of 1 part with 0.75 part of lanolin for addition to soap. Chlorinated ceresin or chlorinated mineral oils may be used in place of the chlorinated paraffin.

An addition of 2 per cent rosin will increase the stability of soap, as the author has proved by experiment. The proportion of rosin is based on the fat charge. Ekschnam. *Riechstoffindustrie & Kosmetik* **12,** 113-5 (1937).

◆

Superfatting Agent

A superfatting agent which has a slight neutralizing action has the following composition:

	Parts by weight
Beeswax	700
Lanolin	1500
Borax	62
Water, distilled	3000
Stearin	400
Lanolin	1500

The beeswax and first portion of lanolin are heated together to about 80°C. The borax is dissolved in the water, which is boiling hot, and the solution stirred into the melted fats and allowed to boil for some time. The mixture is then allowed to cool to about 60°C. with stirring. The stearin is melted in another suitable vessel and the rest of the lanolin added to it. It is added to the first mixture at a temperature of 50°C. and stirred. About 2 per cent of this is used as superfatting agent with soap chips.

Soap stock which has been salted out with alkali only has a tendency to be rather sharp and can easily be somewhat irritating to the skin. Such soap can be neutralized with sulfonated oil or castor oil fatty acids and treated further with proteins. A formulated neutralizing agent is as follows:

	Parts by weight
Casein	1600
Water	5900
Borax	1600
Water	800
Boric acid	40
Lanolin, anhydrous	150

The casein is allowed to swell in water overnight. The next morning the hot borax solution is added to the casein mixture and the whole heated on the water bath at 70°C. for about 2 hours. The casein dissolves completely by this treatment. Mix and add the powdered boric acid. After thorough mixing, melt the lanolin and add this to the mixture on the water bath. Remove and mix until homogeneous. About 5 per cent is added to sharp soap in the mixing machine. Ekschnam. *Riechstoffindustrie & Kosmetik* **12,** 116 (1937).

◆

Recognizing Rancidity

A quantitative reaction for characterizing rancidity of fatty substances should not be adopted. The Kreis reaction, as modified by Taufel, Sadler and Russow is more certain than others proposed. If negative results are obtained with this reaction, it should be supplemented by tests for peroxides. The organoleptic features do not characterize the progressive variation of rancidity and should be classed as auxiliary. R. Rouzaut. *Anales asoc. quim. argentina* **24,** 160; through Chem. Abs.

◆

Effects of Soaps

Soap to test the effect of various types on cotton cloth and on skin were prepared from: (1) naphthenic acids, (2) resin acids, (3) liquid synthetic acids, (4) a mixture of cottonseed oil and a fat mixture, and (5) a mixture of 50 per cent fatty acids from the fat mixture, 25 per cent resin acids and 25 per cent liquid synthetic acids.

The detergent properties of substitute soaps are lower than those of soaps prepared from natural oils. Mixed soaps showed an equal detergent power. Of the substitute soaps the resinates are most effective and are nearly as good as the oil soaps, while the soaps made from liquid synthetic acids are least effective. All of the substitute soaps caused discoloration, graying or yellowing of cotton after washings in tap water. The offensive odor of substitute soaps is removed from the wash by rinsing. The oil soaps are more destructive to cloth in washing than the substitute soaps, with the mixed soaps occupying the intermediate position.

The oil soaps are most harmful to human skin, producing sharp dryness and roughness. The substitute soaps are entirely harmless, showing no ill effects after long use in bathing and laundering. Resinates cause sticking of hair, which is difficult to remove. The oils from liquid synthetic acids and naphthenic acids are less sticky, but impart a persistent unpleasant odor to hair. A. Laptev and V. Moldavskii. *Masloboino Zhirovoe Delo* **13,** 30-3; through Chem. Abs.

◆

Oil Bleaching

Many fatty oils can be bleached well by treatment with sulfuric acid and bleaching earth together. Certain dark liver oils were found to be bleached only by treating first with concentrated sulfuric acid and then without removing the acid, adding bleaching earth. The latter takes up the acid, so that the acid value of the oil is scarcely increased by the combined treatment. Generally 2-3 per cent of sulfuric acid is added very slowly to the agitated oil at a temperature of 30-40°C.; stirring is continued for a half hour. Bleaching earth to the amount of 3-5 per cent of the oil is added and the mixture gradually warmed to 100°C. The progress of the treatment must be followed by frequent sampling, particular attention being paid to the acid value. J. Davidsohn and A. Davidsohn. *Industrial Chemist* **13,** 283 (1937).

◆

Nageshwar Oil

Nageshwar seed found in abundance in the forests of India, yields a dark yellowish brown oil with an unpleasant odor, having a saponification value of 196, acid value of 10 and iodine number of 90. Its fatty acid composition is: Palmitic acid 8.2 per cent, stearic 15.8, arachidic 1, oleic 55.4 and linoleic 19.4 per cent. N. G. Chatterji and A. C. Gupta. *Oil Colour Trades J.* **91,** 1656 (1937).

Superfatting Agents

SUPERFATTING agents give plasticity and smoothness to toilet soap and are also chosen with a view to preventing the development of rancidity on long storage. Lanolin has long been used for this purpose. It has a characteristic odor which must be disguised by a suitable perfume. Wax mixtures have been developed in Europe to overcome the objections to ordinary lanolin. They are white and have no odor of their own. They consist of waxes and only a small amount of lanolin, so that they do not become rancid.

The addition of superfatting agents is not so much intended to counteract the defatting tendency of soap, as to give a mild softening effect on the skin, so that the outer skin will not become dry and harsh. Lanette wax serves to prevent hydrolysis of the soap with the formation of alkali. It is added to toilet soap in the proportion of 1 or 2 parts to 100 parts of soap chips in the mixing machine. Lanette wax consists of a mixture of stearic and palmitic alcohols.

Petrolatum is another superfatting agent. It must be of the purest quality and under no condition have a petroleum odor. It must also be free of acid and alkali. Up to 5 per cent can be added to toilet soaps. More than 5 per cent would diminish the lathering powder of the soap.

A superfatting agent which has a mild neutralizing effect consists of the following:

	parts
Beeswax	700
Lanolin	3000
Borax	62
Water	3000
Stearin	400

The beeswax and half of the lanolin are melted together and warmed to about 80°C. (176°F.). The borax is dissolved in the water and the solution brought to boiling. The mixture of the first two constituents is added and the whole boiled for a short time. The mixture is stirred until it has cooled to 60°C. (140°F.), when a homogeneous emulsion results. The stearin and the rest of the lanolin are brought to about 50°C. (122°F.), added to the emulsion and well mixed in. About 2 per cent of this is added to soap chips.

A superfatting agent which is recommended as not diminishing lathering power is trolhetta oil. This consists of the methyl ester of stearic acid. About 4 per cent is added to toilet soap and to liquid soaps. It is added with coloring matter and perfume. The oil has a yellow color and an odor like that of alcohol.

The use of lecithin as superfatting agent has presented some difficulties. It is wax-like, strongly hygroscopic and yellow in color. The color quickly changes in air to a dark brown. Pure lecithin is insoluble in water, but swells after some hours to a gel. It is soluble in chloroform, carbon tetrachloride, ether and in hot fats. Patents cover its conversion into a water- and alcohol-soluble form. Mixing the lecithin into soap is difficult, as the wax-like mass tends to gel and to remain unevenly distributed. It is more easily added to soap in the form of soybean oil, which is rich in lecithin. Unsaponified soybean oil promotes rather than retards rancidity development, since it is somewhat readily oxidized. Saponification of lecithin products interferes with the action of lecithin as a superfatting agent.

Lecithin can then be mixed with a purified lanolin to give a satisfactory product. A good superfatting mixture consists of the following:

	Per Cent
Lecithin-lanolin mixture	1.5
Petrolatum	1.0
Purified, odorless wool fat	0.5

A toilet soap may be made from the following:

	Per Cent
Soap chips	90.
Potash coconut oil soap	5.
Lanolin-lecithin	5.
Nipagin	0.2

Nipagin is the methyl ester of *p*-hydroxybenzoic acid.

The difficulties encountered with the inclusion of lecithin in soap can be overcome by use of "soap-lecithin", which contains about 55 per cent of lecithin and which has a syrup-like rather than a wax-like consistency. From 5 to 8 per cent of this is added with perfume and color. Other materials used as superfatting agents are prepared from cellulose and appear in commerce under different trade names. They increase lathering power. They are sold in the form of cubes and are treated with 10 parts of boiling water to cause swelling. After stirring, 9 parts of cold water are added and this is allowed to stand overnight. The whole goes into solution, forming a stable homogeneous liquid, of which 1-2 per cent is used in soap. Hermada. *Seifensieder-Ztg.* **64,** 355-6 (1937).

Olive Oil Substitute

A substitute for olive oil in lubricating wool and other fibers is Howard's Ester Oil, exhibited for the first time at the British Industries Fair, 1937. Ester Oil is a pale yellow liquid stated to consist of an ester of a fatty acid and a cyclohexanol derivative. The substitute has been found in practice to be as good as olive oil, and in some instances better. P. H. Anderson. *Textile Colorist* **59,** 444-5 (1937).

Products and Processes

Fatty Acid Shaving Soap

The mildness and lather stability of shaving soap depends on the choice of fats and oils used. A good shaving soap can be made from the following fatty acids: 25-30 per cent of coconut oil fatty acids, 75-70 per cent of tallow fatty acids. Half of the latter may be replaced by bleached palm oil fatty acids, bone fat fatty acids, or hardened fat fatty acids. Saponification is carried out at 90°C. (194°F.) with an alkali mixture containing 50 per cent caustic soda and 50 per cent caustic potash which has been heated to the same temperature. The alkali is added slowly with stirring, in an amount dependent on the saponification number of the fatty acid mixture. Finally 0.2 per cent of a concentrated solution of sodium thiosulfate is added. *Seifensieder-Ztg.* **64,** 515 (1937).

Textile-dressing Agent

A product having strong capillary activity is produced by treating *m*-aminocyclohexanol with lauric acid chloride and then treating the product with concentrated sulfuric acid. Soc. pour l'ind. chim. a Bale. Swiss Patent No. 187.421; through Chem. Abs.

Colloidal Silicate Detergents

Colloidal alkali-metal silicates for use as detergents having normally elongated colloidal particles are reduced to size and rounded and roughened by subjecting a colloidal suspension to impact against a surface. Electric Smelting and Aluminum Co. British Patent No. 461,013.

Soaps for Silk Cleaning

Although silk is less sensitive to alkali than wool, still it is necessary to use neutral soap containing no rosin and no mineral oil in cleaning raw silk. Degumming of silk is to separate the sericin which is readily soluble in dilute alkali. A neutral sodium grained soap with an olive oil base is suitable, or soaps of peanut oil, sesame and similar oils may be used. In the silk dyehouse, only olive oil soap should be used and this should contain no neutral fat, no free caustic and no alkali carbonate, since dilute alkali attacks the smooth surface of the fiber. Sulphonated fatty acids and potash soaps have an unfavorable effect on the "handle" of the silk. Hans-Joachim Henk. *Deutsche Parfumerie-Ztg.* **23,** 259 (1937).

Bentonite Detergents

Detergents for general use are composed of bentonite and one or more detergent sulfonated products. Sulfated alcohols, borax, sodium phosphate, soda ash, water and/or glycerine may be added. Robert H. Marriott, Bernard B. Dugan and F. W. Berk & Co., Ltd. British Patent No. 461.221.

Wetting Agents

Chlorinated neutral fats, fatty acids, resinic acids or naphthenic acids are mixed with ethers of polyhydric phenols which contain at least 1 free hydroxyl group. The products are sulfonated and neutralized. Oranienburger chemische Fabrik A.-G. French Patent No. 806.905; through Chem. Abs.

Cracking of Soap

The cracking of toilet soap is attributed to its tendency to crystallize. Soaps made from oil stock predominant in liquid glycerides of an unsaturated character do not crack at all. This type of oil base is represented by olive and sesame oils. Palm oil and peanut oil give soaps with little tendency to crack. As a remedy for cracking, addition of suitable binding agents to the soap during the milling process is suggested,—or the balancing of the fat charge to include sufficient noncrystallizable soaps. J.M. Vallance. *Soap, Perfumery & Cosmetics* **10,** 581-2 (1937).

Fat Stabilizers

Phenols such as hydroquinone, pyrogallol and quinone are the best antioxidants for fats; aromatic amines are less efficient. Lecithins are good antioxidants for protecting fats in the presence of traces of metals. F. Wittka. Chem.Ztg. **61,** 386-8, 389 (1937); through Chem. Abs.

Nickel-formate Catalyst

Laboratory and factory tests in the continuous hydrogenation of cottonseed and sunflower oils showed that the activity of recovered nickel-formate catalyst decreases with increasing moisture content and aggregation of nickel particles. The success of repeated use (3 times) of recovered catalyst depends on the filtration of the fat mixture at 140-50°C., discharge of the catalyst from the filter press directly into the oil and reworking it on rolls. P. Artamonov. *Masloboino Zhirovoe Delo* **12,** 537-9; through Chem. Abs.

Cleansing Agents

Aromatic hydrocarbons are mixed with esters of higher aliphatic acids containing at least one hydroxyl group in the alcoholic residue, and the mixtures are treated with an excess of a reagent having a condensing and sulfonating action. Thus, a mixture of naphthalene and glycerol monostearate may be treated with fuming sulfuric acid at 80°C. I. C. Farbenind. A.-G. German Patent No. 644.131.

Silicate Detergents

In the production of anhydrous detergents consisting of alkali-metal silicates and alkali-metal-aluminum silicates, a fused mass of the silicate is cooled by passing between cooling rolls, to a temperature below that at which opaque crystalline material is normally formed, with such rapidity that a

transparent product is obtained which forms a substantially clear aqueous solution. In an example a fused alkali silicate is cooled to below 1000° F. in 5 seconds. Electric Smelting and Aluminum Co. British Patent No. 462,591.

Foam Preparations

A foaming agent for use in the production of air foam consists of a highly concentrated solution of a wetting agent such as sulfated fatty alcohol or a sulfonated product, and an albumin degradation product, in a mixture of water and a water-miscible solvent such as methyl alcohol, ethyl alcohol, glycol, glycerine, etc. I. G. Farbenindustrie A.-G. British Patent No. 460,596.

Liquid Soap

The following formulas and methods are suggested from India for liquid soap:

	Parts
1. Coconut oil	6
Olive oil	13
Castor oil	1.5
Water	35
Caustic potash, 45°Be.	10

	Parts
2. Coconut oil	15
Peanut oil	1
Castor oil	4
Water	35
Caustic potash, 45°Be.	10

	Parts
3. Coconut oil	18
Castor or olive oil	2
Water	40
Caustic potash, 45°Be.	10

Melt together the oils over a slow flame and strain through cloth. Put the filtered oil stock over a slow flame. Dilute the caustic potash solution with 20 parts of water which has been softened with potash, warm slightly and mix slowly with stirring into the warm oil mixture. Let boil slowly for about 2 hours. An emulsion should form. Soap should break off in flakes when allowed to fall from a spatula.

When the emulsion stage is reached, the pan charge begins to swell, showing that saponification is complete. Add further warm water but do not cool down enough to form lumps of soap. If lumps are formed, boil again. Add hot water from time to time and continue boiling until a clear soap solution sets in the pan. Test for complete saponification and neutrality. Dissolve the perfume to be added in alcohol and add to the soap before filtering. Water-soluble dye may be used, but an alcohol-soluble dye is better. A green or orange shade is usually preferred. A. N. Ghose. *Indian Soap J.* **3,** 275-6 (1937).

Colloidal Nickel Catalyst

Colloidal nickel is obtained by decomposing nickel carbonyl. The colloidal nickel can be separated from the oil still in an active state by means of active carbon. The activity of the resultant cataclyst has somewhat decreased, but notwithstanding this, hydrogenation of fatty oils can be carried out at 60°C. under atmospheric pressure. If the activity of the colloidal nickel decreases by the aggregation of the metal particles, these particles can be separated easily by the magnetic method. A fat with a softening point of 60° has been obtained by the hydrogenation of soybean oil by means of a colloidal nickel cataclyst at 60°C. and at atmospheric pressure for 1¾ hours. H. I. Waterman and 7C. van Vlodrop. *Rec. trav. chim.* **56,** 521-5 (1937); through Chem. Abs.

Isothymol in Soap

The cheap isothymols are exceptionally suitable for use in disinfectant soaps. Isothymol has an insect-repelling effect. Its disinfectant power in soap is rather higher than that of the more usual phenol-containing soaps. Isothymol perfume formulas are as follows:

I

	Grams
Liquid isothymol	600
Spike oil	200
Citronella oil	100
Geranium oil, synthetic	50
Benzylidene acetone	20
Resinoid styrax for soap	30

II

	Grams
Liquid isothymol	800
Citronella oil	50
Methyl vanillin	100
Diphenylmethane	50

Hugo Janistyn. *Soap, Perfumery & Cosmetics* **10,** 597-8 (1937).

Liquid Soap Clarification

Sometimes liquid soaps are allowed to stand for several weeks, preferably in a conical container, so that all sediment and turbid material can settle. The lower the temperature of settling, the less apt is turbidity to develop later. If there is not sufficient time for this, other methods may be resorted to. One is the addition of egg albumin to the liquid soap at a temperature of 50-60°C. One hen's egg, well beaten, will clarify about 5 kilograms of liquid soap when well stirred in at the temperature mentioned.

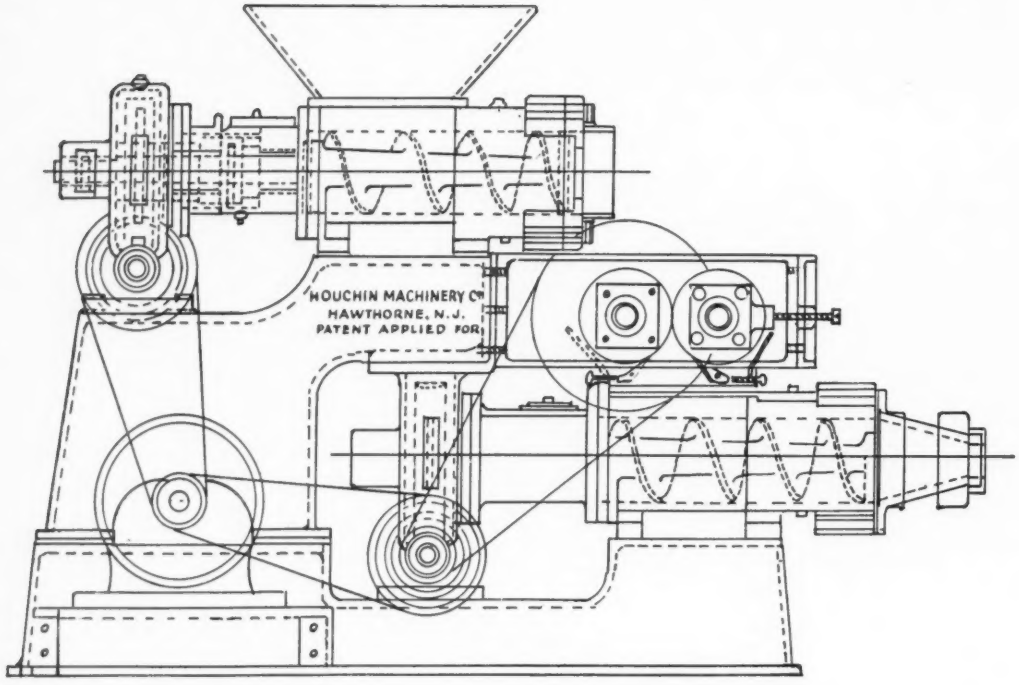
Alumina cream is another clarifying agent. It can be prepared by adding 10 per cent ammonia to a hot concentrated solution of aluminum sulfate until no more white jelly-like precipitate forms. Wash the precipitate 3 or 4 times with hot water, letting settle well each time. The precipitate can then be collected in a cloth and excess water wrung out. The precipitate is then stirred well with 1 part of liquid soap, after which the soap is poured off. About 500 grams of the prepared alumina cream is sufficient to clarify 100 kilograms of liquid soap. Using this agent, liquid soap can be prepared in 2-3 days instead of 3-4 weeks. Infusorial earth can also be used and adsorbs solid particles in the same way that alumina cream does. These two agents can be regenerated by washing in warm water.

The use of asbestos as a filtering agent is desirable, as it adsorbs and filters at the same time, giving a crystal-clear filtrate. Either settling or some treatment such as that described should always precede filtration in order to make the latter an economical and satisfactory process. Oculus. *Seifensieder-Ztg.* **64,** 512-3 (1937).

Vegetable Oil Motor Fuel

Peanuts, copra, cottonseed, etc., are heat-treated and redistilled to give a crude oil containing 35 per cent of gas oil and 15 per cent of fats and paraffin. M. Friedwald. *Rev. petrolifere No.* **734,** 597-9 (1937); through Chem. Abs.

HOUCHIN MACHINERY CO., INC. HAWTHORNE, N. J.



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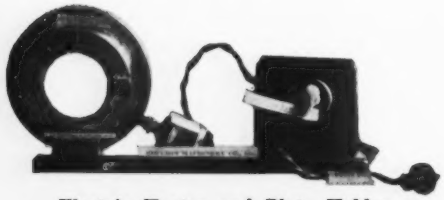
Soap passing through the first time produces ribbons of soap. Second passing produces a fine finished, well compressed bar of Soap. For the second passing, remove Short Head on Second Plodder, bring Long Finishing Head in place. This Head is fitted with our Electric Heater and Plate Holder. A small stream of water passing through Plodder Cylinders and Rolls of Mill keeps the Soap cool, preventing the Soap from blistering. There is no dropping of Soap. The machine is very easily cleaned. It is excellent for short runs of Soap and saves Horse-Power.



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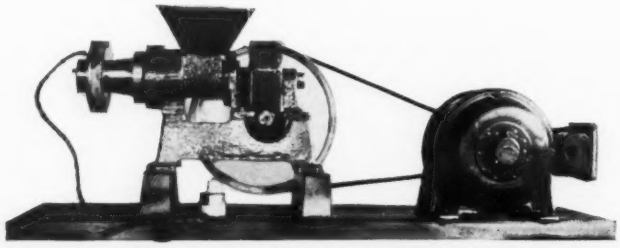
By using this unit instead of steam, gas or lamp a uniform heat can be maintained. No more blistered soap. Made to fit all Plodders.



Laboratory Plodder, complete with Motor, Electric Heater, and Plate Holder.

Recovery of Bleaching Earths

ACCORDING to a recent method (German Patent No. 605,736), deoiled or defatted bleaching earth is washed for at least a half hour with an aqueous solution of alkali carbonate. Generally a 20 per cent solution of soda ash or potash is sufficient, of which about 80 parts are used for the treatment of 20 parts of deoiled bleaching earth. The use of soda ash or potash alone without previous washing with a liquid solvent was known before the existence of this patent, but such treatment did not result in the complete renewal of the exhausted bleaching earth, since the salts mentioned failed to separate oily and fatty components completely.

The point of the new method lies in the use first of a volatile solvent, followed by soda or potash solution, which gives practically complete revivification of the earth. The alkali carbonate solution may be replaced by a hydrochloric acid solution for washing, e.g., one containing 20 per cent of hydrochloric acid (d_{15} 1.10). The washing is carried out in the usual way at boiling temperature, or if with increased pressure at a temperature not over 110°C. It is necessary to stir the mixture of liquid and earth thoroughly, e.g., in a lead-lined or other acid-resistant container which can be made air-tight and which is equipped with a heating coil and automatic stirrer.

The paste is then freed from liquid by running it through a filter press. It is washed with water until the wash water is pure and clear. After that follows the usual drying in a drying drum, then sieving and air sifting. If the bleaching earth contains activated carbon, the deoiling, washing and drying have to be followed by ignition to a bright glowing red in the absence of air. The period of heating should be at least an hour. By this treatment the bleaching earth and the activated carbon mixed in with it are both renewed.

The method was applied as follows: Soybean oil was purified with a mixture of 90 per cent bleaching earth and 10 per cent activated carbon. The bleaching agent was then treated as described below. A comparison was made by (1) treating a sample of soybean oil with a fresh mixture of bleaching earth and activated carbon, (2) treating another portion of the same oil with the bleaching agent which had been used and then revivified according to the above method, (3) treating a portion with used agent which had only been extracted with benzene and then with hydrochloric acid, and (4) treating a portion with used agent which had only been washed several times with potash solution and boiled. The four samples of oil were examined as to color in a Lovibond tintometer with the following results:

	—Lovibond reading—	
Oil No.	Yellow	Red
1	12	0.89
2	12	0.89
3	15	1.35
4	31	4.50

The solvent and alkali treatment followed by washing and heating gives an agent as efficient as one which has not been previously used. The loss of agent during the revivification process amounts to 10 per cent, so that this amount must be replaced each time. H. Goette. *Allgemeine Oel- und Fett-Ztg.* **34,** 258-9 (1937).

Ethanolamine in Oil Refining

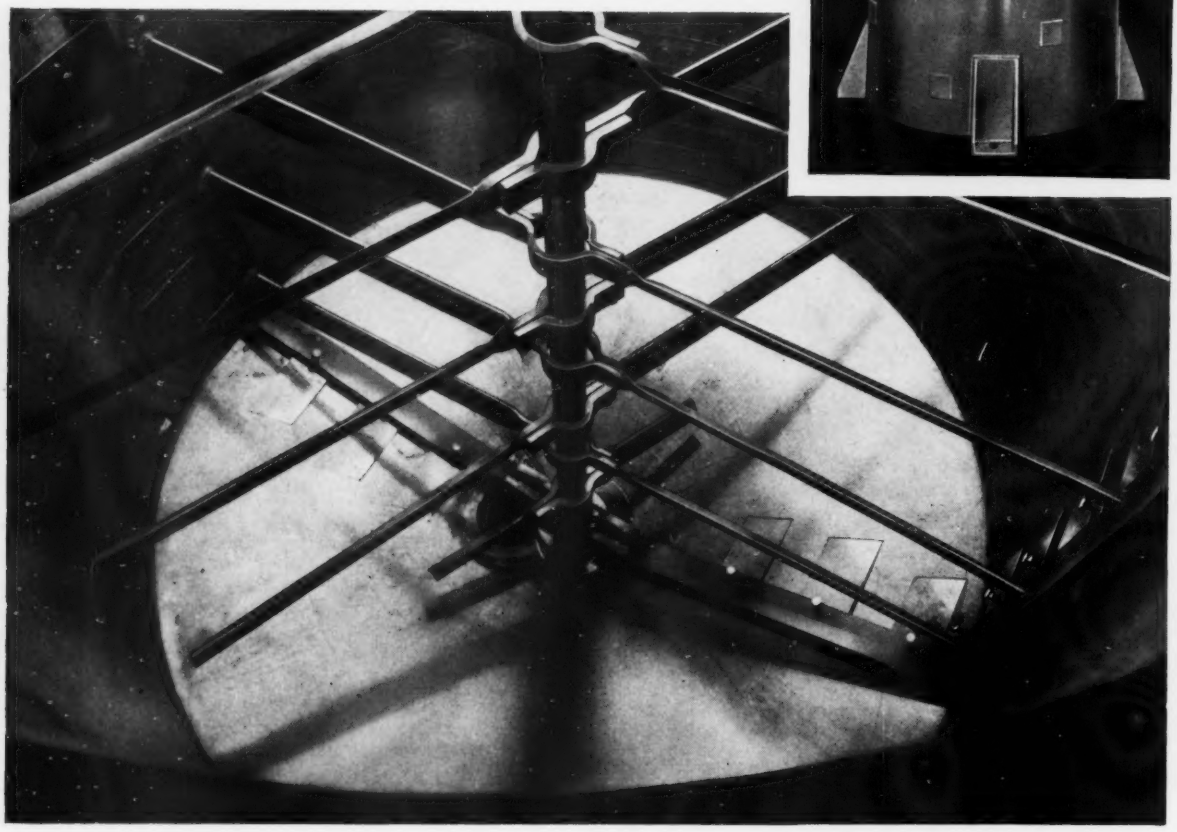
A new process for refining fatty oils is based on the use of monoethanolamine in place of soda in the extraction of free fatty acids from the glycerines. The method is protected by U. S. Patent No. 1,885,859, British Patent No. 391,658, and French, German and Dutch patents, and was described at the 5th International Technical and Chemical Congress of the Agricultural Industries held recently.

The main objection to the soda-refining process is that emulsions are formed which retain neutral oil. Monoethanolamine is practically insoluble in the glyceride mixtures comprising most of the neutral fatty oils of commerce. Being alkaline, it combines with the free fatty acids present and the resulting soap is insoluble in the fatty oil, but soluble in excess ethanolamine. This gives a two-phase liquid mixture which can be separated by centrifuging. Ethanolamine also dissolves impurities such as undesirable coloring matter, odorous substances and impurities associated with the production of rancidity. A quantity of monoethanolamine varying from 60 to 100 per cent in excess of the equivalent amount of free fatty acids present in the crude oil will give satisfactory results. Temperatures above 60° C. should be avoided, those most suitable are 30-55° C. The time between mixing and separating should be as short as possible.

The extracted oil retains 0.1-0.4 per cent of ethanolamine, which can be removed by washing with water. The extract phase is transferred to a still for recovery of ethanolamine after separation from the oil. The amount of free fatty acid left in the oil is usually less than 0.1 per cent. The process is applicable to most oils containing up to 10 per cent of free fatty acids, but is not workable with castor oil due to the high solubility of the solvent in the oil. It has been applied to cottonseed, coconut, palm, olive, soybean, perilla, sardine, linseed oil and cocoa butter. Some difficulty is encountered with coconut oil during solvent recovery, due to the low molecular weigh-acids present.

The main cost of the process is the loss of ethanolamine. In general, the overall loss will be 1-2 pounds for each per cent of free fatty acid present, per ton of oil treated. Thus a ton of palm oil with 3 per cent of free fatty acid will consume about 4-5 pounds of ethanolamine. *Chem. Trade J. & Chem. Engineer* **101,** 63 (1937).

Laboratory results in Plant production



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For further details on the performance of Monel in Sulfonation processes write International Nickel or send for any of these publications:

Building a Monel Sulfonating Vessel (PIQ, Vol. 1, No. 3); The Use of Inconel, Nickel and Other Nickel Alloys in the Processing and Distillation of Fatty Acids (PIQ, Vol. 1, No. 4); Summary of Sulfonation Corrosion Data; Sulfuric Acid vs. Metals; Caustic Alkalies vs. Nickel and Its Alloys.

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Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,085,733. Shaving Cream, Patented July 6, 1937 by John C. Bird, Montclair, N. J. A shaving cream having the following formula:—

	Parts
Cellulose ether	73.70
Glycerine	5.00
Sodium lauryl sulphonate	1.00
Mineral oil	15.00
Menthol	.10
Oil of bergamot	.20
Water	5.00

No. 2,085,840, Method of Treating Soap, Patented July 6, 1937 by Charles T. Walter, Chicago, Ill., assignor to Industrial Patents Corporation, Chicago, Ill. A method of forming soap which comprises extruding plastic soap stock at a temperature of about 70° F. in the form of tubes having walls approximately .0035 inch to .0055 inch in thickness and applying heat to the outer surface of the tubes at the instant of extrusion at a temperature from 160° F. to 180° F. to provide a glossy finish on the outer surface thereof.

No. 2,087,028, Insecticide, Patented July 13, 1937 by Charles B. Gnadinger, Minneapolis, Minn. A stable and readily water soluble insecticide consisting of a pine oil solution of oleo-resin of pyrethrum and a substantially alkali free vegetable oil soap.

No. 2,087,267, Process of Manufacturing Soap, Patented July 20, 1937 by Julius Schaal, New York, N. Y. In the manufacture of soaps having a controlled alkalinity by cold processing, the soap producing a pink color when moistened with phenolphthalein solution, the imrovement which comprises mixing together 200 parts of beef tallow and 50 parts of cocoanut oil, heating the mixture to between 50° and 52° C., stirring the hot mixture and adding 1.2 parts of hydrogen peroxide solution, continuing the stirring and adding a preheated caustic soda solution, the solution being obtained by dissolving 38.65 parts of flake caustic soda in 40 parts of water and having a temperature of 90° to 92° C., discontinuing the stirring upon the thickening of the emulsion and causing the spontaneous reaction to proceed with the simultaneous generation of heat until substantially complete, the generated heat bringing the soap mixture to about 120° C. and the hot mixture being intermittently stirred to control the reaction, again stirring the mixture after the exothermic reaction has subsided and adding to the hot soap mixture a preheated alkaline aqueous solution of silicate, the solution of silicate being obtained by mixing together 8 parts of water, 5 parts of silicate and 1 part of a caustic soda solution of the strength employed for saponification and heating the silicate mixture to 90° C., the silicate solution being gradually added and the stirring being continued until the soap mixture has the desired alkalinity, and recovering the soap so produced.

No. 2,087,427, Metal Polish, Patented July 20, 1937 by Frank M. Biffen, Ridgefield Park, N. J., assignor to Foster D. Snell, Inc., Brooklyn, N. Y. A dry powder metal polish composition consisting essentially of a water soluble ammonium salt of the group consisting of ammonium sulfate and ammonium oxalate, water soluble soap, a finely divided inorganic abrasive material, in a quantity in the neighborhood of three-fourths of the whole by weight, and a colloidal suspension agent of the nature of colloidal clay in a quantity capable of maintaining the composition in a homogeneous stable suspension in water.

No. 2,087,592, Detergent Cartridge for Waste Pipes, Patented July 20, 1937 by William J. Chesnut, Montclair, N. J. A device for preventing accumulation of waste material in waste pipes, comprising a cartridge formed from a water soluble composition of soda and lime capable of dissolving greasy matter, the cartridge having a head of greater width than the main body of the cartridge, the head having a plurality of passages therein, the main body of the cartridge being divided longitudinally into a plurality of parts and having passages communicating with the passages in the head.

No. 2,087,599, Horticultural Oil Spray, Patented July 20, 1937 by Edward B. Hunn, Cranford, N. J., assignor to Stanco, Inc. An insecticide emulsion including, water, a suitable oil, a preservative and finely powdered natural parts of a plant selected from the group consisting of derris and cube foot containing an inherent emulsifier and properties toxic to insects, the emulsion being supplemented when the plant parts are reduced in amount as herein set forth by an auxiliary emulsifier in small amount.

No. 2,087,788, Method of Treating Soap, Patented July 20, 1937 by Adolph F. Thal, Elmhurst, Illinois. The method of treating soap under vacuum which consists in withdrawing hot soap in liquid form and at a temperature substantially above the boiling point of water under the vacuum and having a high percentage of solids directly from a soap kettle, admitting the withdrawn soap in undiluted form to a vacuum chamber, applying a thin film of the soap, not exceeding .0015 of an inch, while in the vacuum chamber to a relatively small heated drying drum rotating at from 50 to 150 R.P.M., thereby to reduce the moisture content and cool the soap, cooling the film to a temperature near the boiling point of water under the vacuum and reducing the moisture content of the film on the drum uniformly to less than 20 per cent without skin effect, and scraping the soap from the surface in substantially solid form in condition to be directly packed in bar or flake form.

No. 2,088,308, Detergent Composition, Patented July 27, 1937 by Walther Schrauth, Berlin - Dahlem, Germany, assignor, by mesne assignments, to "Unichem" Chemikalien Handels A.-G., Zurich, Switzerland. A detergent in the form of molded pieces comprising approximately 53 per cent of the sulfonates of a mixture of approximately equal parts of oleyl alcohol and saturated alcohol having chiefly 16 and 18 carbon atoms in the molecule, 40 per cent of the sulfonates of the mixture of alcohols produced by the reduction of the fatty acids obtainable from cocoanut oil and 7 per cent of curd soap.

Glycerine by Lime Process

Glycerine is recovered in the soap industry by saponifying with lime at a slow controlled rate so as to produce a coarse, porous calcium soap from which the glycerine can be readily and completely extracted with water. G. Buchner. *Fette und Seifen* **44,** 147-9 (1937).

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380—Pump Control

McDonnell & Miller, Chicago, recently announced a new high pressure combination pump control and low water cut-off. Its function is to start and stop electric boiler feed pumps in accordance with the boiler water level. If, for any reason, the pump should stop and the water level in the boiler drops abnormally, the cut-off will stop the stoker or oil burner and, at the same time, close an alarm circuit.

Publications

381—Valve Booklet

Merco Nordstrom Valve Co., Pittsburgh, has just issued an elaborately illustrated bulletin which describes the different types of valves used in the soap industry and the types of alloys available. Copies of the bulletin may be obtained through SOAP.

382—Air Conditioning

Fairbanks, Morse & Co., Chicago, have just issued a new booklet "What Is Air Conditioning?" It discusses and illustrates the various types of air conditioning units, their functions and their applications in office buildings, shops, residences, industrial plants, etc. Copies of the bulletin are available upon request from Fairbanks, Morse & Co., 900 S. Wabash Ave., Chicago.

383—Process Control

Foxboro Co., Foxboro, Mass., has just issued a new 32-page booklet describing a system of automatic control of temperature, pressure, level and flow in continuous industrial processes. The booklet is illustrated with pictures of plant applications. Copies are available.

384—Successful Packages

Continental Can Co., New York, has just issued Volume III of "Successful Packages", a book which they issue each year showing a selected group of new containers designed and manufactured by the Continental organization. The selected packages illustrate a number of the newer trends in package design. Copies of the volume are available.

385—Essential Oils of U. S.

P. R. Dreyer Inc., New York, has recently issued a new folder describing essential oils native to the United States. Specifications and characteristics are given for such domestic oils as birch, bay, cedarleaf, cedarwood, hemlock, peppermint, sassafras, spearmint, tansy, wintergreen, wormwood, etc. Copies are available.

Peroxide Rancidity Test

Rancid fats and oils can be tested for the presence of peroxides by means of a zinc iodide-starch reaction: Put 5 cc. of oil into a graduated tube fitted with a glass stopper. With fats, melt the sample on the water bath and then dissolve it in an equal volume of petroleum ether. Add 2.5 cc. of dilute sulfuric acid (1:4) and 2.5 cc. of Merck's zinc iodide-starch solution. Close the stopper and shake thoroughly. If oxidizing agents are present, iodine is set free and gives a blue color with the starch. The color appears more quickly, the greater the amount of oxidizing agent present. The reaction is positive if the color appears after 1-3 minutes' shaking. A color is produced in 5 minutes by the action of oxygen in the air.

A similar quantitative determination is based on the oxidation of trivalent titanium to sixvalent titanium. The latter gives a yellow color in aqueous solution proportional to the amount present. The color is measured in a step photometer with the aid of color filter S 43. The value found in this way for peroxides increased in proportion to rancidity as estimated by rancid odor and taste. R. Strohecker, R. Vaubel and A. Tenner. *Fette und Seifen* **44,** 246-8 (1937).

Reclaiming Dry-cleaning Liquid

In a dry-cleaning plant in which the cleansing liquid is filtered, pure liquid is recovered periodically from the soiled liquid by boiling the latter in contact with the filter; the agitation produced by the distillation serves to shake solid accumulations from the filter, such solid being present in the fluid as a filter aid. Earl C. Pugh. British Patent No. 461,963.

Antioxidants

Tocopherols (a, b and r), and their allophanates are effective antioxidants in lard. H. S. Olcott and O. H. Emerson. *J. Am. Chem. Soc.* **59,** 1008-9 (1937).

Shaving Soap Specifications

(*From Page* 33)

E-2a. The material shall conform to the detail requirements as indicated in following tables.

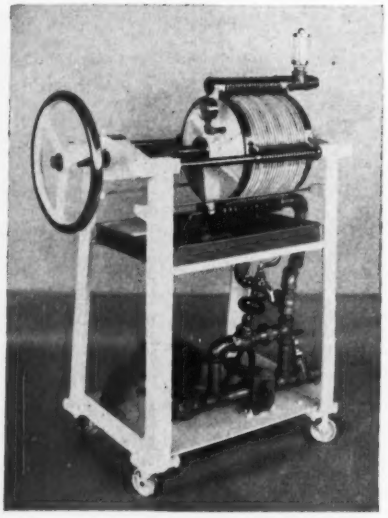
E-2b. **Computation.** — The percentage of moisture shall be computed, and reported by the testing laboratory, on the shaving cream as received. The percentages of all other constituents shall be calculated and reported on an assumed moisture content of 50 per cent for Class A, and of 60 per cent for Class B. For basis of purchase see paragraph I-2.

F. Methods of Sampling, Inspection, and Tests.

F-1. Any requirements of the individual departments are noted under Section H.

F-1a. The inspector or purchasing officer shall determine whether or not the material is satisfactory as regards odor, color, consistency, action on container or discoloration (Type II), and performance. If unsatisfactory the material should be rejected and not submitted to the testing laboratory for the tests referred to under para-

to produce a brilliant, sparkling liquid soap . . . . use an ERTEL FILTER



Buyers object to cloudy liquid soaps and shampoos even though they may do the work just as well as a clear, brilliant product. Why risk this added sales resistance when the problem of clarification is so easy and inexpensive to solve with an ERTEL filter? To get an idea of what you can expect an ERTEL filter to do in the way of brightening up your product, send us a sample which we will filter and return to you without charge.

ERTEL filters are also being extensively used on disinfectants, insecticides, polishes, etc. Let our laboratory demonstrate in a practical way just what we can do to improve your product.

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Dept. C, 120 East 16th St. New York

BOOKS

Modern Soap Making, by Dr. E. G. Thomssen and C. R. Kemp. The first entirely original American book on soap manufacture in several years. Thoroughly covers every phase of soap manufacture and glycerin recovery. Written by practical soap men....a truly practical book. Chapter headings: Raw Materials; Machinery and Equipment; Soap Making Methods; Soap Products; Glycerin Recovery and Refining; Analytical Methods; Appendix with reference tables, etc. 450 pages. $7.50 per copy in U. S. Add 50 cents for foreign postage.

Henley's Twentieth Century Book of Recipes, Formulas and Processes. A handy reference book listing 10,000 miscellaneous formulas, including special sections for soaps, polishes, insecticides, etc. 800 pages, $4.00.

The Industrial Chemistry of Fats and Waxes, by Hilditch. A study of the fats and waxes in relation to their use in industry. 450 pages, $7.50.

Hydrogenation of Organic Substances, by Ellis. Latest revised edition of this well-known book, pre-eminent in the field of hydrogenation. 990 pages, $15.00.

Laundry Chemistry, by A. Harvey. A manual on the chemistry of laundry materials and methods. 120 pages, 5 x 7½. $1.75.

Modern Soap Perfumes, by Sedgwick. A practical handbook on the science of soap perfumery, $1.00.

Pyrethrum Flowers, by Gnadinger. A complete compilation of all known facts on pyrethrum; its history, sources, evaluation, chemistry and uses. The problems involved in the manufacture of pyrethrum products are given thorough and lucid exposition. 396 pages, $5.00.

"Soap." Bound volumes for years 1927-28, 1935 and 1936 available at $12.00 each.

Soap Blue Book. A Buyer's Guide, Catalog and Business and Technical Reference Book. 195 pages, $1.00.

Vegetable Fats and Oils, by George S. Jamieson. 444 pages. An American Chemical Society Monograph. Covering classification, occurrence, properties, analytical methods, etc., of vegetable oils, fatty acid and other derivatives; also production and refining methods, $6.50.

Chemistry of Laundry Materials, by D. N. Jackman. A useful book for the laundry operator, containing valuable information on the chemistry of laundry materials. Discusses alkalies, soaps, bleaches, starches, also the newer detergents, synthetic soaps, etc. 230 pages, $2.50.

The Chemical Formulary, by H. Bennett. This latest edition carries 5,000 formulae all said to be different from those appearing in the first and second editions. 5½ x 8½. 550 pages. Price, $6.00.

Owing to the large number of books supplied it is impossible to open accounts on individual book orders or to supply books on approval. Please send check with order.

MAC NAIR-DORLAND CO.

254 West 31st Street NEW YORK CITY

Type I	*Classes A, B and C Cake, Stick, Roll*		*Class D Powder*	
	Minimum	*Maximum*	*Minimum*	*Maximum*
	Percent	*Percent*	*Percent*	*Percent*
Moisture (xylol distillate method)	—	10	—	2
Matter insoluble in hot 95% ethyl alcohol	—	0.8	—	0.8
Free alkali	—	none	—	none
Free fatty acids (calculated as stearic acid)	—	0.5	—	0.5
Matter insoluble in hot, distilled water	—	0.3	—	0.3
Anhydrous soap (calculated as potash soap)	87	—	96	—
Amount passing a No. 20 sieve	—	—	100	—

graph F-2. (See paragraphs D-1e, D-2c, D-2d, and D-2f.)

F-1b. **Lathering.**—Shake 100 ml of a 0.2 per cent (based on the nonvolatile matter) solution of the soap (Type I, Classes, A, B, C, D, and Type II, Class A) in distilled water at room temperature in a stoppered, 200-ml graduated cylinder 30 times in 15 seconds, and let stand at room temperature for one hour. The volume of foam above the liquid shall extend to the top of the cylinder and shall not decrease more than 10 per cent of its original volume in 1 hour. See paragraphs D-1c and D-2e.)

F-2. Deliveries will, in general, be sampled and tested according to the methods contained in Section F of Federal Specification P-S-536. However, the Government reserves the right to use any additional available information to ascertain whether the material ordered meets the specification.

G. Packaging, Packing, and Marking.

G-1. Any special requirements of the individual departments are noted under Section H.

G-2. **Packaging.**—Unless otherwise specified, shaving soap and cream shall be furnished as follows:

G-2a. **Shaving Soap—Type I:**

G-2a (1). Class A shall be furnished in approximately 2-oz. cakes shaped to fit the ordinary shaving cup, and packed 8 cakes to the package and 10 packages to the case.

G-2a (2). Class B shall be furnished in sticks, wrapped and inclosed in metal containers; each bidder shall state with his proposal the approximate net weight of the stick he proposes to furnish.

G-2a (3). Class C shall be cakes furnished in approximately 1-lb. rolls, wrapped and packed in cartons.

G-2a (4). Class D shall be furnished in powdered form in approximately 1-lb. cans.

G-2b. **Shaving Cream. Type II.**

G-2b (1). Class A, lather cream, shall be furnished in collapsible tubes (see paragraph D-2d). Bidder shall state in his proposal the approximate net weight of the contents of the tube he proposes to furnish.

G-2b (2). Class B, brushless cream, shall be furnished in jars or in collapsible tubes (see paragraph D-2d). Bidder shall state in his proposal the approximate net weight of the contents of the jar or tube he proposes to furnish.

G-3. **Packing.** — Unless otherwise specified, the subject commodity shall be delivered in standard commercial containers, so constructed as to insure acceptance by common or other carriers, for safe transportation, at the lowest rate, to the point of delivery.

G-4. **Marking.** — Unless otherwise specified, shipping containers shall be marked with the name of the material, type, and the quantity contained therein, as defined by the contract or order under which the shipment is made, the name of the contractor, and the number of the contractor order.

Type II	*Class A Lather Cream*		*Class B Brushless Cream*	
	Minimum	*Maximum*	*Minimum*	*Maximum*
	Percent	*Percent*	*Percent*	*Percent*
Moisture (xylol distillation method)	—	50	—	60
Matter insoluble in hot 95% ethyl alcohol	—	0.3	—	—
Free alkali	—	none	—	none
Free fatty acid (calculated as stearic acid)	—	6.5	20	—
Matter insoluble in hot distilled water	—	0.2	—	—
Anhydrous soap (calculated as potash soap)	40	—	2.5	—

H. Requirements Applicable to Individual Departments.

H-1. The following Department specifications of the issue in effect on date of invitation for bids shall respectively form a part of this specification, insofar as the activities noted are concerned.

H-1a. **Army:** U. S. Army Specification No. 100-2, Standard Specification for Marking Shipments.

H-1b. Navy Department General Specifications for Inspection of Material (copies of which may be obtained without cost upon application to the Bureau of Supplies and Accounts, Navy Department, Washington, D. C.).

H-1c. **Marine Corps:** Instructions issued by the Quartermaster.

I. Notes

I-1. Purchasers should exercise all options offered herein and shall specify type, class, etc.

I-2. **Basis of Purchase.** — Shaving soap and cream, of each type and class, should be purchased by net weight.

I-3. Bidder should state the size and weight of his unit.

I-4. It is believed that this specification adequately describes the characteristics necessary to secure the desired material. Bid samples should be specifically asked for in the invitation for bids, and the particular purpose to be served by the bid samples should be definitely stated, the specification to apply in all other respects. (See paragraphs D-1e, D-2c, D-2d, D-2f, and F-1a.)

I-5. An Alphabetical Index of Federal Specifications may be purchased as noted in the paragraph next below, price to be obtained from the Superintendent of Documents.

I-6. Copies of this specification may be obtained upon application, accompanied by money order or coupon, or cash, to Superintendent of Documents, Government Printing Office, Washington, D. C., price 5 cents. Federal Specification P-S-536, for Soap and Soap Products; General Specifications (Methods for Sampling and Testing), and RR-S-366, for Sieves; Standard, Testing, can be procured at 5 cents per copy from the same source.

Notice: When Government drawings, specifications, or other data are used for any Government procurement operation, the United States Government thereby incurs no responsibility or any obligation whatsoever and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

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1. Complete freedom from kerosene odor
2. Stability
3. Balanced fractionation
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5. A flash point which meets all safety requirements
6. Controlled uniformity

In your plans for 1938, select DEO-BASE *as your carrier, so that your finished insecticide can be sold everywhere, for use anywhere.*

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When we decided to specialize in Pyrethrum, our specific purpose was to give the insecticide manufacturer the attention to which he is justly entitled.

Pyrethrum is sufficiently inconsistent to require unwavering vigilance throughout every stage of manufacture. It is only because we maintain this vigilance, controlling every step by careful laboratory analysis, that assures you absolute dependability.

By mastering one subject instead of several, we make it possible for you to obtain the most of the best—at a saving.

Specialists in Pyrethrum & Rotenone

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Killing Power — That's the thing

Ever Putt With A MASHIE NIBLICK?

THE golfer who tried to play every shot in his round with the same club would be "up against it" in the same way that the insecticide manufacturer is when he tries to make one "all-purpose" insecticide answer all of his sales demands. He would soon learn to appreciate the absolute necessity of a specialized tool for a special purpose.

Not only will a specialized insecticide answer a specific killing problem in a more efficient manner, but it will also do its job at a lower cost. The exact characteristics for its particular function can be included in the formula, without the necessity for providing the whole range of qualities that the single "all-purpose" insecticide must have.

Before your plans for 1938 are all settled, why not consider the possible advantages of using:—

- **Prentox Stock Spray Concentrate No. 20—**
  Safe, effective and enduring repellency combined with quick knockdown and good killing value.

- **Prentox Bedbug Concentrate—**
  Immediate leg paralysis and high toxicity. Especially adapted for control of crawling insects.

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  Combined wing and leg paralysis to give quick knockdown and almost complete kill of flies and mosquitoes and effectiveness against crawling insects.

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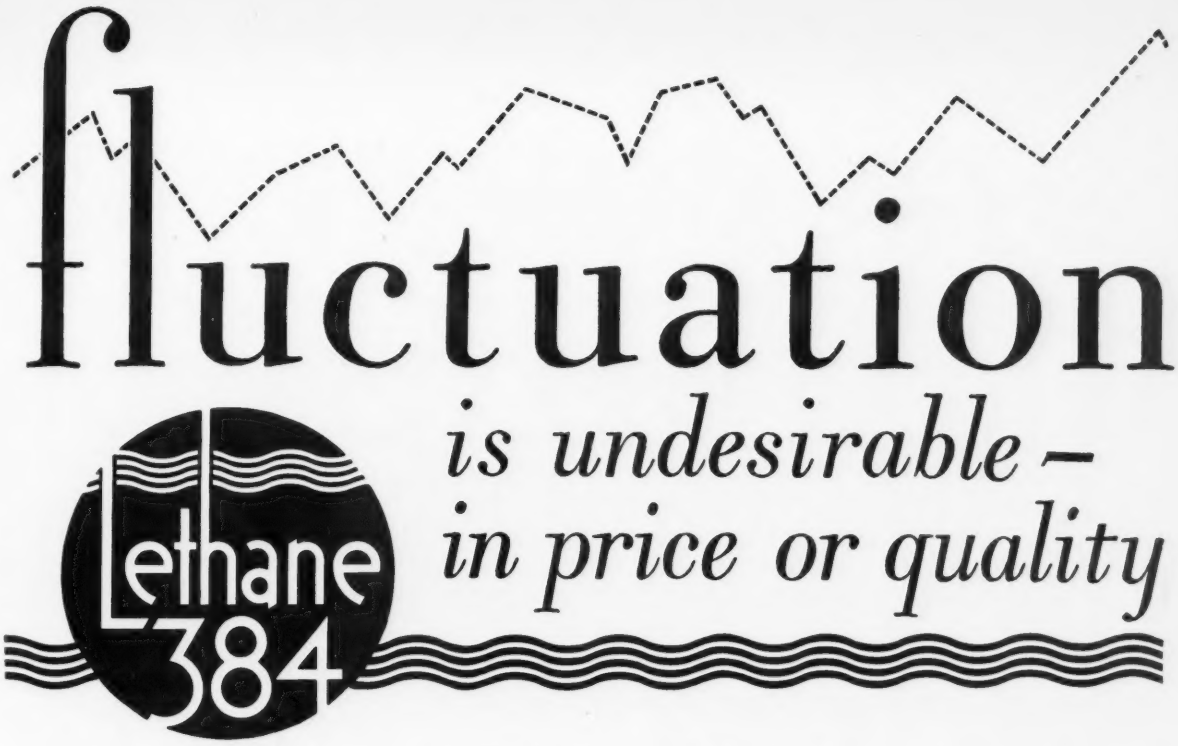

is undesirable –
in price or quality

In considering your 1938 campaign, you want to be sure of two points:

1. **That your basic raw materials are of standard strength so that the high quality of your finished products can be consistently maintained.**
2. **That you can buy at rock bottom prices and that you will not be exposed to unwelcome fluctuations in the price of your raw materials.**

Ever since Lethane 384 was introduced, we have maintained a rigidly controlled standard of quality; it is for this reason that insecticides based on Lethane 384 enjoy the reputation of being uniform in performance. By our control of raw materials and skillful manufacture, we have reduced the chance of price fluctuation to a minimum; as a matter of fact, our price trend has been consistently downward. We urge you to consider Lethane 384 for use in your products.

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CHICAGO · KANSAS CITY, MO. · *Canadian Agent* P. N. SODEN & CO., LTD., LACHINE, P. Q., CANADA

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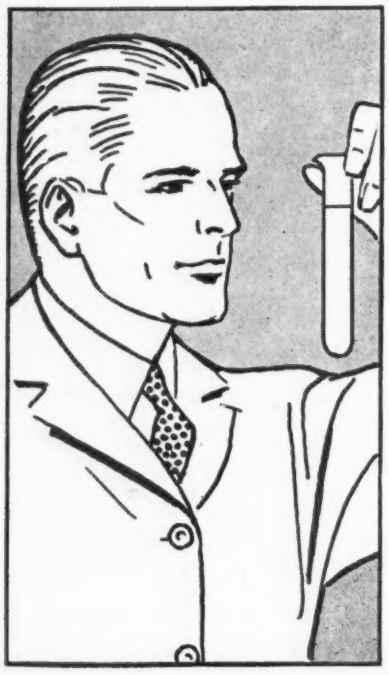
This powerful killing agent now made in only one grade . . . **ODORLESS** and **CLARIFIED** . . . at the **REGULAR** price



BEGINNING at once, we will make only one grade of Pyrocide 20 . . . a better grade than any pyrethrin concentrate we have ever before made or tested. Because it contains only odorless base oils . . . *no* kerosene . . . it has practically no odor except the natural floral aroma of pyrethrum. And it is more powerful and retains its high toxicity because its pyrethrin content is thoroughly stabilized with a tested antioxidant.

Yet this finer grade of Pyrocide 20 . . . with improved odor, improved color, improved stability, improved clarity . . . sells at the regular price. You pay no premium to enjoy the benefits of this latest forward step in the insecticide industry.

By using Pyrocide 20, you will eliminate objectionable odor and color from your household insecticide and make it the modern kind of spray consumers demand and dealers favor.

A CHANGE IN PYROCIDE 20

Check these Pyrocide 20 Specifications:

1. PYRETHRIN CONTENT: 2.5% by weight or 2 grams per 100 cc.

2. STABILIZED: Retains its strength. Stabilized with antioxidant that has been proved effective by laboratory tests and commercial use over two years.

3. KILLING POWER: Guaranteed equal or better than any extract of equivalent pyrethrin content.

4. NO "FALSE PYRETHRINS": Patented process removes materials which are not pyrethrins but which react like pyrethrins when assayed by the Seil method. Unless removed these substances give a higher apparent pyrethrin content than is actually present.

5. ODOR: Made only with odorless base oil. Practically free from odor, except the natural floral aroma of pyrethrum. No kerosene used in Pyrocide 20.

6. COLOR: A RICH AMBER. Free from colloidal green coloring matter. Makes a rich looking, sparkling yellow spray when diluted for use — not a weak, watery-looking spray. The purest form of pyrethrins commercially available.

7. CLARITY: Dilutes brilliantly clear with any base oil. Chilled to 0° C. to remove resins and other materials which cause clouding. Remains clear either in concentrated form or when diluted for use.

8. ECONOMY: No increase in price for improved odor—improved color—improved stability—improved clarity. Requires ⅓ to ½ less perfume.

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PARATINTS do your coloring and scenting in half the time and with half the effort it takes to do either separately. They do both jobs better, too. PARATINTS are mixed in *exactly* the right proportions to give you the best results. Why not use their double-duty action to save yourself time, money and trouble? PARATINTS are available in six popular colors—already matched with appropriate scents that have proved beyond question their ability to cover the odor of paradichlorobenzene and moth balls,—and to perfume bath salts. PARATINTS are available in two price ranges—Series "A" and Series "B". Write for samples and quotations.

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McCORMICK produces the finest milled Pyrethrum and Derris Powders in the world. They are standardized both analytically and biologically in the McCormick laboratories—the most complete testing laboratories in the insecticide industry.

And the *fineness* of every lot—the fact that these powders are ground into *more killing particles per ounce*—is checked and proved with mathematical accuracy in the Tyler Ro-Tap Testing Sieve Shaker. This guarantees uniformly greater killing power because there are more lethal particles per ounce to come into contact with vital parts of the insect.

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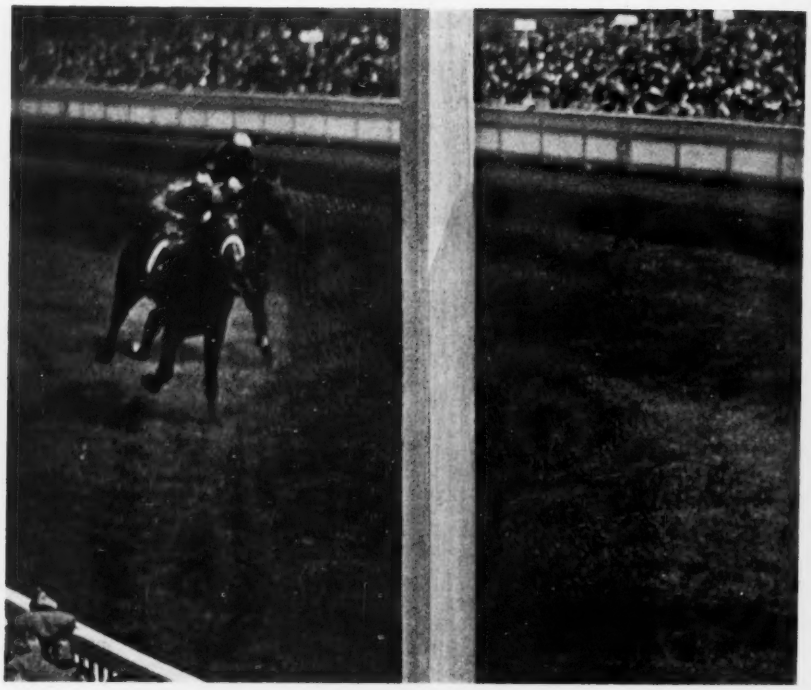

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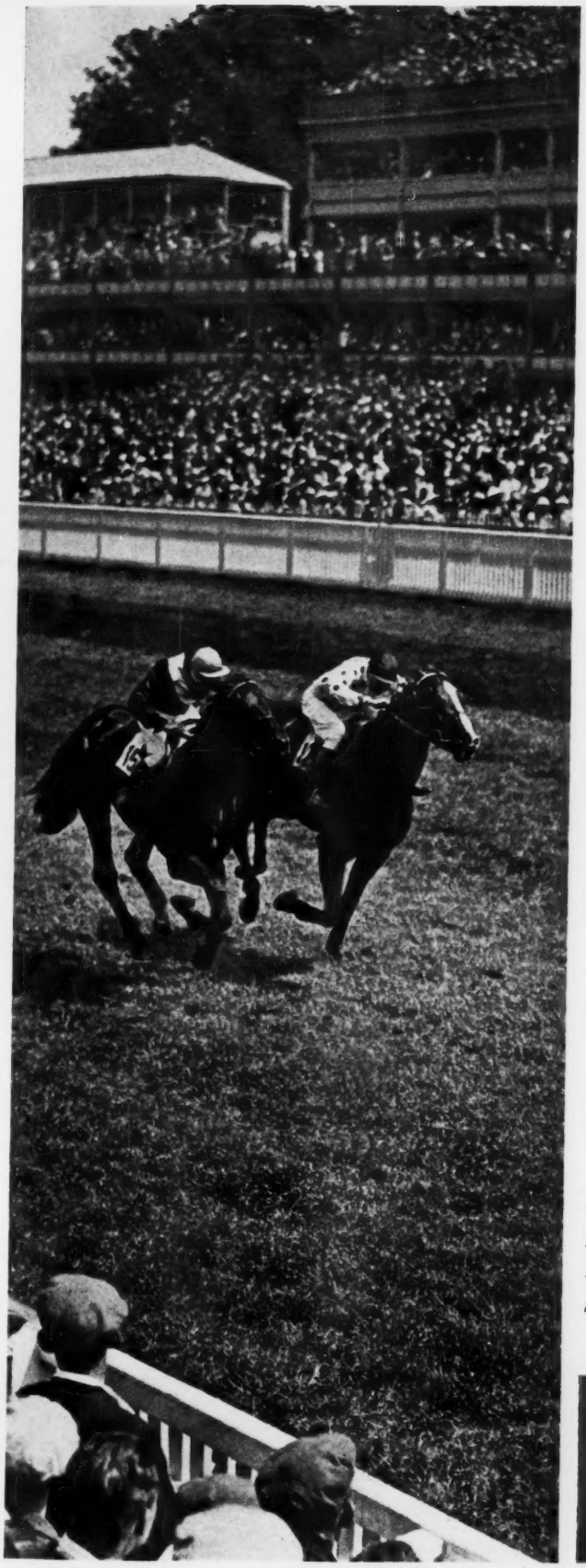

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ARE WHAT COUNT

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Now at the close of the summer season, are you satisfied with the showing of your insect spray?

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A pleasing perfume is indispensable to give a good insecticide the effective sales appeal that marks a winner.

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A BALANCED PERFUME **scientifically covers** *all* **the unpleasant odors of the spray itself.**

A BALANCED PERFUME **disappears when the base odors are dissipated.**

A BALANCED PERFUME **does not affect the kill.**

A BALANCED PERFUME **is the only** *right* **perfume for your spray.**

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The van Ameringen-Haebler laboratories have devoted their time and attention to research in all types of insecticides and can authoritatively specify the proper *BALANCED PERFUME* **for your particular insecticide.**

Send us a gallon of your product, unperfumed, and let us develop the right BALANCED PERFUME which can make your insect spray a winner next season.

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Series A $1.00	*Series B* $1.50	*Series C* $2.00
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For Fly Sprays

$.50 *lb.*	$1.00 *lb.*
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Sectorome No. 6	Sectorome No. 66

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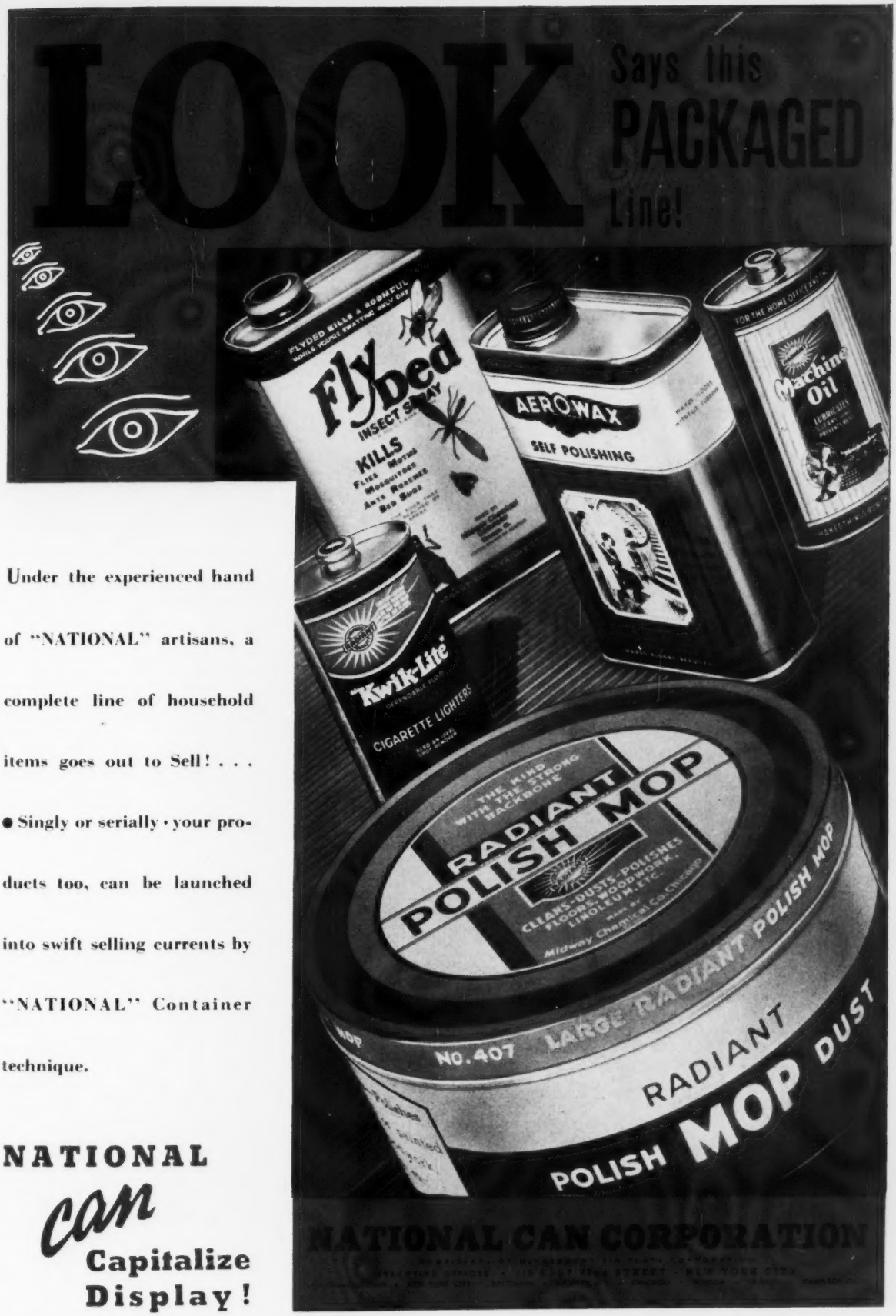

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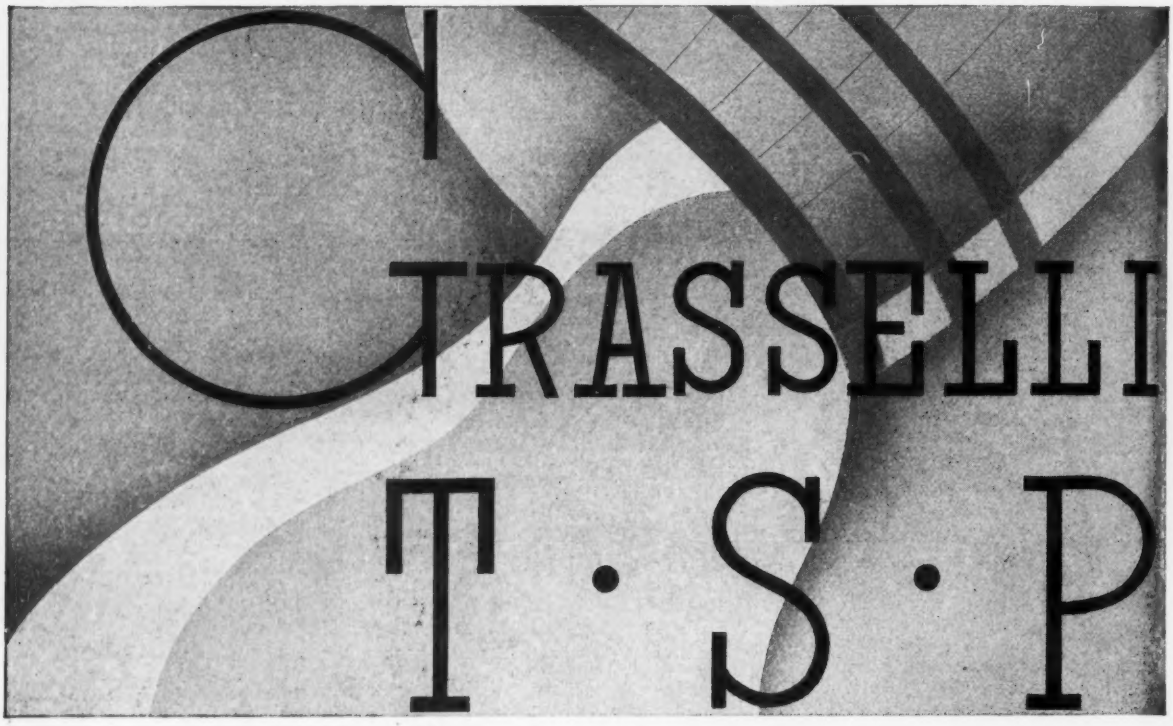

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You will find in GRASSELLI TRI SODIUM PHOSPHATE those *plus qualities* that make it the popular brand generally specified on most orders for T. S. P.

It is non-caking; it comes in non-sifting packages, which prevent loss in transit or storage; it is delivered promptly from our nearest branch.

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OFFICIAL specifications for (1) liquid household insect spray, and, (2) disinfectants, four types,—hypochlorite, pine oil, coal-tar emulsifying, and cresylic acid,—have been adopted by the National Association of Insecticide & Disinfectant Manufacturers. These specifications are now being prepared for printing and will within a short time be available in booklet form. These booklets will be distributed to all federal government, state, and municipal purchasing agencies by the National Association to guide them to as great an extent as possible in their purchases of these materials.

These specifications have been drawn up by men with a wide background of experience and knowledge in the field of insecticides and disinfectants. They have been adopted by the National Association after long and careful consideration, and considerable revision. In the interest of quality standardization and protection for both the manufacturer and buyer, it is urged that these specifications be adopted generally as the basis for both the sale and purchase of these products.

▼

National Association of
Insecticide & Disinfectant Manufacturers, Inc.

John H. Wright, Secretary

122 East 42nd Street New York

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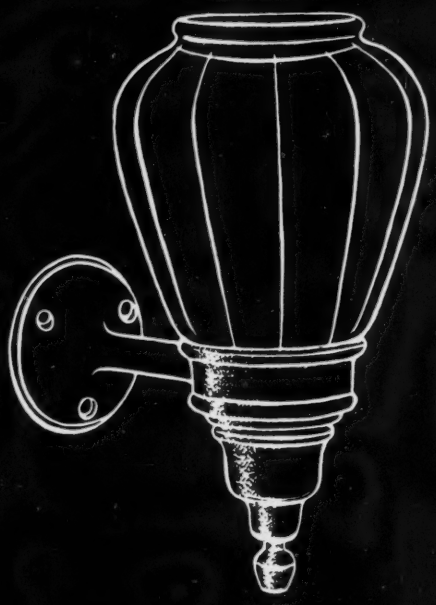

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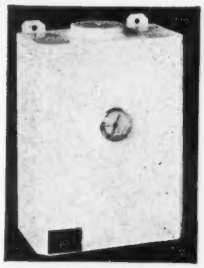

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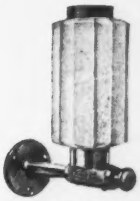

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SANITARY PRODUCTS

A Section of SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

THE greatest need of the manufacturer of disinfectants today is new consuming outlets for his products,—and an orderly cultivation of new markets if and when they are found. It is a subject worth close study over the next year or two, preferably by a committee of the National Association. Think it over, you manufacturers and jobbers!

SEVERAL well-known manufacturers of insecticides have become increasingly agitated recently over the restrictions which the State of California is evidently planning to enforce in the matter of labelling insecticide containers. Restriction in the use of the words, "kills insects" and "insect killer," and the substitution of "controls," is not, and has not been, to the liking of manufacturers. The insecticide makers also continue to object strenuously to the elimination of the term, "non-poisonous," from household spray containers.

Frankly, we feel that the enforcement agencies of California are making a mountain out of a mole hill in this matter of insecticide labeling. It does seem a trifle overdone when labels which meet the requirements of most other states, and the U. S. Department of Agriculture, do not suit the officials of California. We all know that the label wording on standard insecticides, to which California objects, is essentially true,—that is within the realm of plain good sense and common usage. It seems to us that the officials are splitting hairs, and in so doing are causing trouble to manufacturers all out of proportion to the importance of the matter to the State of California or its people.

THE annual flood of formulas for homemade household and stock sprays, published in newspapers and farm papers and emanating generally from state experiment stations and other local benefactors of the farmer, has not been quite so great this past summer as in the few years preceding. Apparently, many a farmer has learned by experience that the results with homemade insecticides are not all they are cracked up to be, notwithstanding the recommendations of some experiment stations. Experience is the great educator, be it in insecticide manufacture or in anything else. Probably this is why the method oft-recommended to the farmer of stirring up finely powdered pyrethrum in ordinary kerosene and straining it through cheesecloth, has lost caste,—if it ever had any,—because it gives a cloudy, dirty, ill-smelling product which readily stains and is not fit for use in any home.

But, from a newspaper, we note that Dr. C. O. Eddy of the Louisiana Experiment Station at Baton Rouge has discovered a *new* spray formula which is a boon to the farmer and can be made at small expense from "pyrethum" powder and kerosene. Another formula is suggested which calls for one pint of "kerosene extract" and 19 pints of cleaners' naphtha. If these are really Dr. Eddy's recommendations, we fear that he has fallen some years behind the times and should catch up on his reading of the technical literature. And the poor farmer should be warned before he ruins his best parlor wall-paper or blows the roof off his house.

Method for the Evaluation of

Semi-Concentrate Fly Sprays

By W. N. Sullivan

Bureau of Entomology and Plant Quarantine
U. S. Dept. of Agriculture

THIS investigation was carried on under a cooperative agreement between the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture and the National Association of Insecticide and Disinfectant Manufacturers, in an endeavor to determine the best methods of testing household insecticides and develop standard methods for such testing. The following tests were made in an attempt to add to our knowledge of the correct procedure for testing semi-concentrate fly sprays[1]. The Campbell turntable method was used on flies 2 to 3 days old, with 5 cc. of spray per test. Approximately 100 flies were used in each test.

Effect of Various Concentrations of Pyrethrins on Mortality of House Flies: The first problem was to determine the effect of various concentrations of pyrethrins on the mortality of house flies. Concentrations of 1, 2, 3, and 4 mg. of pyrethrins per cubic centimeter of solvent were used. The petroleum-fraction solvent was a colorless and almost odorless product, refined especially as a base for household insecticides. It will be designated "kerosene" in this paper.

The results are shown in figure 1 and table 1. As one would expect, an increase in concentration of pyrethrins at first brought about a corresponding increase in toxicity, but at high concentrations the mortality curve leveled off. In other words, although two semi-concentrate fly sprays may give equally high kills, they are not necessarily of the same pyrethrin content.

Effect of Reducing Samples of Pyrethrum Extracts to the Same Pyrethrin Concentration: A second series of tests was run to determine the effect of reducing the pyrethrum samples of different pyrethrin concentrations to the same pyrethrin concentration (1mg/cc). This was nearly the same as the concentration of the 1937 N.A.I.D.M. official control insecticide, household spray type, which was included in the tests as a standard

TABLE 1—MORTALITY OF HOUSE FLIES 24 HOURS AFTER BEING SPRAYED WITH KEROSENE EXTRACTS OF PYRETHRUM OF VARIOUS CONCENTRATIONS OF PYRETHRINS—TURNTABLE METHOD

Test No.	Date	Mortality of flies after spraying with pyrethrum extracts of indicated pyrethrin concentration				
		1 mg/cc	2 mg/cc	3 mg/cc	4 mg/cc	Control*
		%	%	%	%	%
1	2/16/37	23	49	69	79	23
		14	64	55	79	22
		34	67	87	86	29
		26	60	67	65	31
		31	56	80	79	23
2	2/19/37	25	39	67	65	34
		19	59	55	79	18
		16	52	57	74	26
		26	42	47	68	59
		40	45	69	79	20
3	2/26/37	27	44	49	84	47
		20	51	56	84	26
		29	36	63	84	30
		12	33	65	75	28
		—	33	69	63	27
Mean	....	24.4	48.6	63.3	76.2	29.5

* Official control insecticide, 1937, N. A. I. D. M.

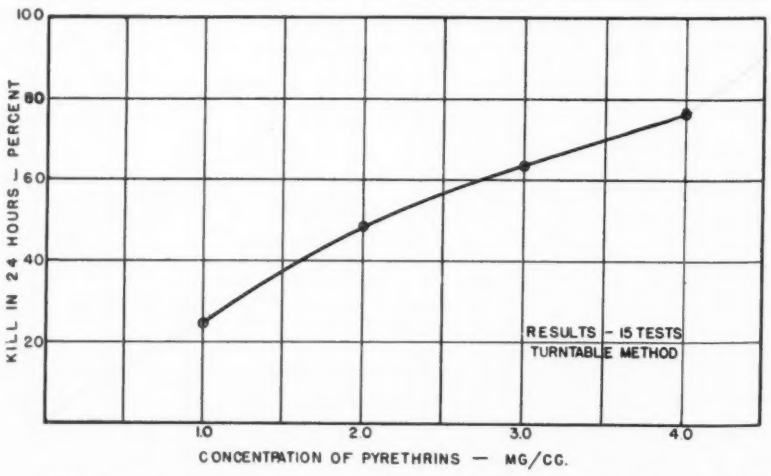


Figure 1. Effect of pyrethrin concentration on toxicity of pyrethrum extracts to house flies.

[1] Similar tests on semi-concentrate fly sprays, using the Peet-Grady Method, have been made by A. E. Badertscher, of McCormick & Company of Baltimore, for the National Association of Insecticide and Disinfectant Manufacturers.

Figure 2—Relative effectiveness of paired combinations of pyrethrins, an aliphatic thiocyanate, and rotenone. 24 hours.

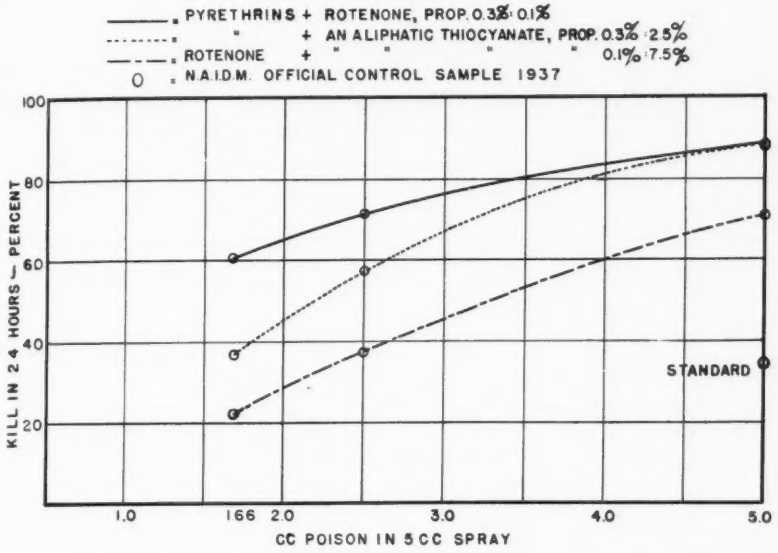
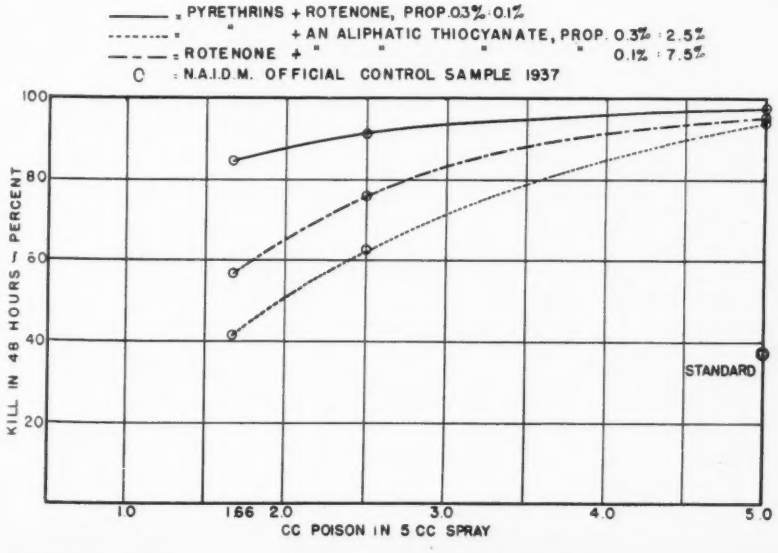


TABLE 2—MORTALITY OF HOUSE FLIES WHEN SAMPLES OF PYRETHRUM WERE REDUCED TO THE SAME PYRETHRIN CONCENTRATION

C. I. Sample No.	Original Concentration of Pyrethrins Mg. per cc.	Dilution used in Tests: Pyrethrum Cc.	Kerosene Cc.	MORTALITY: Test 1 %	Test 2 %	Mean %
767	1	No dilution		16, 20, 36, 28, 15	26, 29, 55, 20, 43	28.8
769	2	2.50	2.50	17, 22, 29, 20, 27	30, 29, 23, 30, 37	26.4
771	3	1.66	3.34	26, 18, 29, 27, 23	27, 33, 38, 41, 25	28.7
773	4	1.25	3.75	30, 24, 21, 14, 20	24, 49, 21, 31, 41	27.5
776*	—	No dilution		32, 10, 31, 16, 19	41, 46, 24, 15, —	26.0

* N. A. I. D. M. official control sample for 1937.

Figure 3—Relative effectiveness of paired combinations of pyrethrins, an aliphatic thiocyanate, and rotenone. 48 hours.



for comparison. The two tests were made on different days.

The results are shown in table 2. When diluted to the same pyrethrin concentration, the samples gave nearly the same kill of house flies in all cases.

Relative Effectiveness of Paired Combinations of Pyrethrins, Rotenone, and an Aliphatic Thiocyanate: After the course of action on materials of this sort had been established, the next step was to test paired combinations of semi-concentrates containing pyrethrins, an aliphatic thiocyanate, and rotenone. The mixtures used were prepared by A. E. Badertscher and contained, as active ingredients, any of the following combinations:

a. Not less than 0.3 per cent of pyrethrins and 0.1 per cent of rotenone. Derris extractives are permissive if the insecticide thereby contains not less than 0.1 per cent of rotenone.

b. Not less than 0.3 per cent of pyrethrins and an aliphatic thiocyanate corresponding to a content of not less than 0.78 per cent of thiocyanoacetic acid.

c. An aliphatic thiocyanate corresponding to a content of not less than 2.34 per cent of thiocyanoacetic acid plus 0.1 per cent of rotenone. Derris extractives are permissive if the insecticide thereby contains not less than 0.1 per cent of rotenone.

The action of the pyrethrins and the aliphatic thiocyanate, when used alone, is complete over a 24-hour period, producing death or a complete recovery of the flies, whereas rotenone is a slow-acting poison requiring a 3-day observation period. For this reason mortality counts were made at the end of the first, second, and third days.

The results of these tests are shown in table 3 and figures 2, 3, and 4. It will be observed in figure 4 that all three samples gave nearly the same kill when the poison was tested undiluted, but when diluted 1 part of poison to 2 parts of solvent there was a wide range of kill. This again showed the necessity for diluting semi-concentrates before testing. The advisability of having a 3-day observation period for sprays containing rotenone is also evident.

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Figure 4—Relative effectiveness of paired combinations of pyrethrins, an aliphatic thiocyanate, and rotenone. 72 hours.

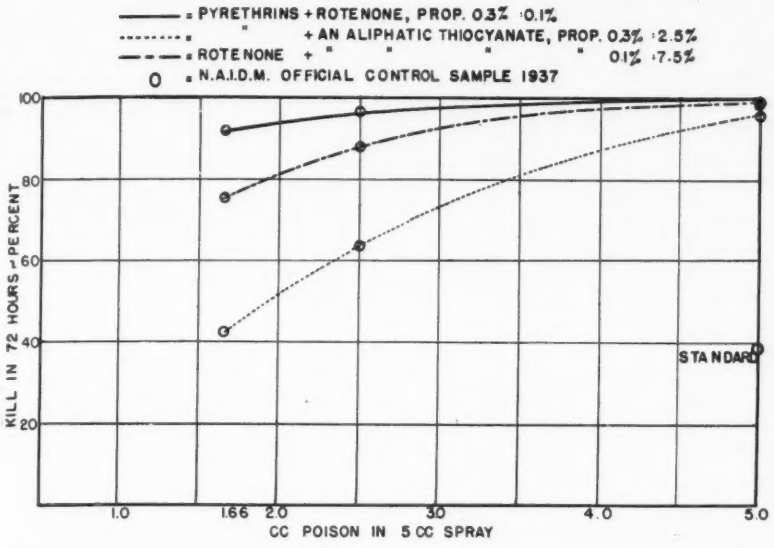

TABLE 3—RELATIVE EFFECTIVENESS AGAINST HOUSE FLIES OF PAIRED COMBINATIONS OF PYRETHRINS, AN ALIPHATIC THIOCYANATE, AND ROTENONE

C. I. Sample No.	Concentration as received			Dilutions used in tests		Mean mortality of flies after*		
	Pyrethrins	Aliphatic thiocyanate	Rotenone	Poison	Kerosene	24 Hours	48 Hours	72 Hours
	%	%	%	Cc.	Cc.	%	%	%
885	0.3	..	0.1	1.66	3.34	60.3	84.7	91.4
				2.50	2.50	7.15	91.0	96.5
				5.00	0.00	89.0	97.1	99.0
887	0.3	2.5	..	1.66	3.34	36.9	41.1	42.3
				2.50	2.50	56.7	62.4	63.5
				5.00	0.00	89.6	94.3	95.5
889	..	7.5	0.1	1.66	3.34	22.0	56.9	75.0
				2.50	2.50	37.6	75.6	88.1
				5.00	0.00	71.0	95.2	98.3
777†	..	..	..	5.00	0.00	34.2	37.0	38.5

* Mean of 10 tests.
† N. A. I. D. M. official control sample for 1937.

Summary and Conclusion: An increase in concentration of pyrethrins in semi-concentrate fly sprays of pyrethrum at first brought about a corresponding increase in toxicity to house flies, but at higher concentrations the mortality curve leveled off. When samples of pyrethrum of different pyrethrin concentration were diluted to the same concentration, the mortality of the flies was nearly the same in all cases. Semi-concentrate fly sprays containing paired combinations of rotenone, an aliphatic thiocyanate, and pyrethrins, when undiluted, gave almost equally high mortalities in 3 days, but when diluted with 2 parts of kerosene there was a wide range in kill. A comparison of the mortalities at the end of 1, 2, and 3 days showed the desirability of a 3-day observation period when the spray contains rotenone. It seems therefore that the best method for the biological testing of semi-concentrate fly sprays is to dilute them and compare them with a standard.

Defines Interstate Commerce

Opinions handed down by the U. S. Federal Trade Commission in the first complaints filed under the Robinson-Patman bill are of particular interest in the insight they give into the commission's interpretation of the meaning of "interstate commerce." In the case involving the Kraft-Phoenix Cheese Co. this concern stated that all its sales to retailers are made in local, or intrastate commerce, with the exception of only a few which are made in interstate commerce in widely scattered trade areas. The commission's opinion still classifies the cheese company's business as interstate in scope, however, "since there is a continuous, uninterrupted flow and current of commerce whose course runs between, among, across and within all the states of the United States." Since the company exercises a continuous and effective control over the channels of distribution through which its products move, the commission concludes that the company is definitely engaged in interstate commerce within the meaning of the Robinson-Patman Act. Another interesting point covered in the commission's opinion on the Hollywood Hat Co. case refers to price differentials. A violation has been assumed by the commission in this case since price differentials to customers are not accounted for by differences in cost of manufacture, sale or delivery.

British Derris Plantation

Presiding at the annual meeting of the Anglo-Dutch Plantations of Java, one of the largest British-controlled enterprises in the tropics, Colonel Sir Robert Williams, Bart. (chairman) announced that the latest culture to be tried on a commercial scale by the company was derris. He said that the demand for this product was likely to increase considerably as the advantage of a vegetable over a mineral insecticide became more widely recognized, especially for use with food crops.

Some 260 acres were planted in 1935 from cuttings imported from Malaya. In later plantings the company has been able to use its own cuttings from acclimatized plants. In 1936 about 535 acres were planted and the crop from this area, to be harvested during 1937, is estimated at between 200 and 300 tons. During the current year a further 773 acres are being planted, and it is hoped that with better selection of the Bibit the crop will be heavier.

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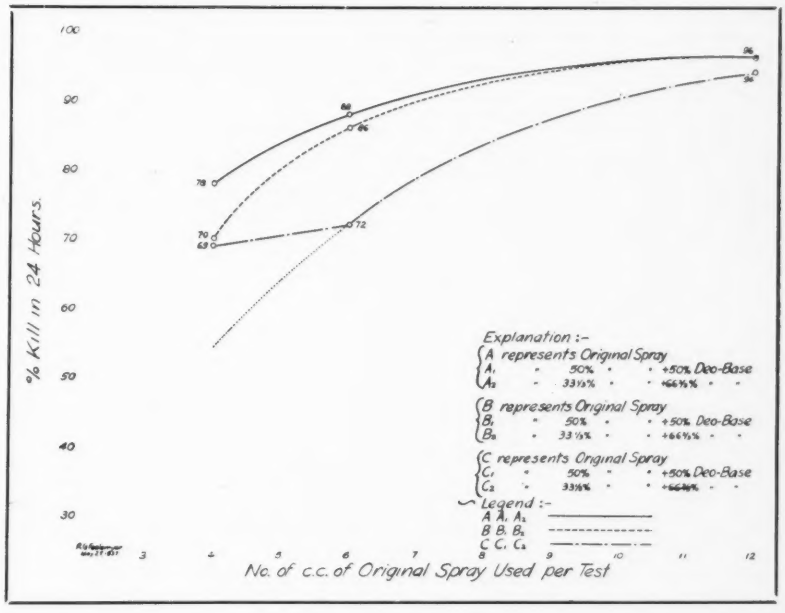
High Kill Insect Sprays

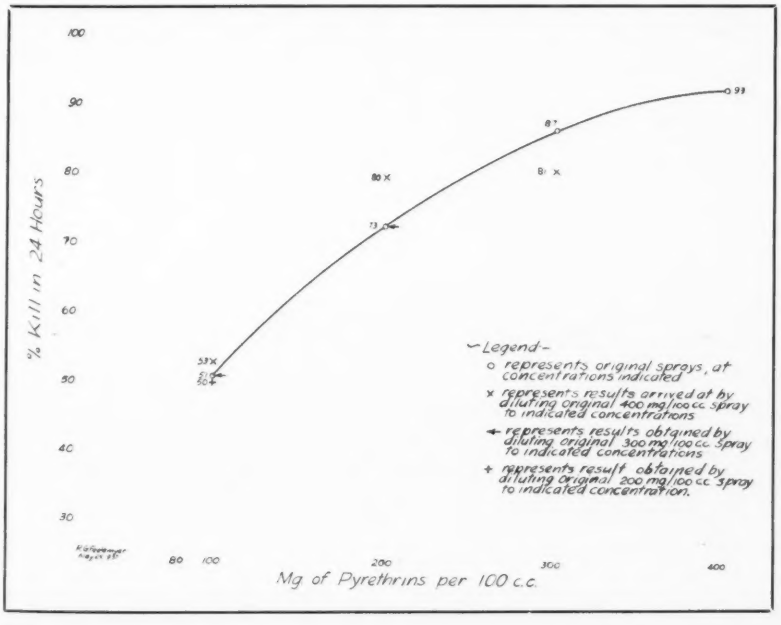
A study and discussion of semi-concentrate sprays and the proper method of their evaluation.

By A. Edison Badertscher

McCormick & Company

THE proper evaluation of semi-concentrates or high kill sprays has been the subject of discussion at the meetings of the National Association of Insecticide & Disinfectant Manufacturers (N.A.I.D.M.) both on the conference floor and in meetings of the Standardization Committee on numerous occasions. Most of the discussions on the floor were started by someone who had temporarily forgotten that the Peet-Grady Method, or perhaps any other method of testing used by the industry, is to give comparative values between two or more products and not actual kill values such as would be obtained when the product is used under insect control conditions and properly applied.


% Kill in 24 Hours.
No. of c.c. of Original Spray Used per Test
Explanation :-
A represents Original Spray
A1 " 50% " " +50% Deo-Base
A2 " 33⅓% " " +66⅔% " "
B represents Original Spray
B1 " 50% " " +50% Deo-Base
B2 " 33⅓% " " +66⅔% " "
C represents Original Spray
C1 " 50% " " +50% Deo-Base
C2 " 33⅓% " " +66⅔% " "
Legend :-
A A1 A2
B B1 B2
C C1 C2


% Kill in 24 Hours
Mg of Pyrethrins per 100 c.c.
Legend -
o represents original sprays, at concentrations indicated
× represents results arrived at by diluting original 400 mg/100 cc. spray to indicated concentrations
← represents results obtained by diluting original 300 mg/100 cc. Spray to indicated concentrations
+ represents result obtained by diluting original 200 mg/100 cc spray to indicated concentration.

The leading argument in the discussions usually sounded like this: "Why have a product that only kills 60 or 70 per cent of the insects? My customers demand something that gives 100 per cent kill." As a result of this kind of reasoning, various types of sprays were being offered to the trade with flowery guarantees and high kill figures, based entirely on tests obtained by a laboratory method such as the Peet-Grady Method, without consideration of the type of sprayer used or the method of application. As a result of this much controversy ensued regarding the true value of a spray because when a spray already contains a high percentage of toxic principles, it will require a proportionately large increase in toxic principles to increase

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BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL Standard-Official Control Insecticide

Series I
Test No.1

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	2/26/37	20C.				107	105	98	61	57						
2	"	"				105	103	98	68	65						
3	"	"				106	103	97	63	59						
4	3/1/37	22C.				104	100	96	52	50						
5	"	"				105	103	98	64	61						
6	"	"				103	100	97	59	57						
7	"	"				101	95	94	46	46						
8	"	"				110	106	96	59	54						
9	3/2/37	23C.				107	95	89	50	47						
10	"	"				105	98	93	37	35						
Total						1052	1010	96	559	53						
AV.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL I-2646 Extract of Pyrethrum 100mg/dl.

Series I
Test No.1

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	2/26/37	20C.				108	99	92	46	42						
2	"	"				101	96	95	50	50						
3	"	"				112	106	95	51	46						
4	3/1/37	22C.				102	98	96	61	60						
5	"	"				104	103	99	54	52						
6	"	"				103	102	99	44	41						
7	"	"				111	107	96	68	61						
8	"	"				100	107	96	57	55						
9	3/2/37	23C.				106	96	90	58	55						
10	"	"				109	103	95	62	57						
Total						1066	1016	95	550	51						
AV.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL I-2647 Extract of Pyrethrum 200mg/dl.

Series I
Test No.1

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	2/26/37	20C.				110	110	100	80	73						
2	"	"				101	98	97	74	73						
3	"	"				103	100	97	68	66						
4	3/1/37	22C.				108	102	94	70	65						
5	"	"				102	96	94	74	72						
6	"	"				109	102	94	86	79						
7	"	"				100	97	97	74	74						
8	"	"				107	107	100	72	67						
9	3/2/37	23C.				103	99	96	85	81						
10	3/2/37	"				107	106	99	90	84						
Total						1049	1017	97	789	73						
AV.																

materially the percentage of kill on house flies when the material is to be tested or evaluated by the Peet-Grady Method. It is, therefore, always wise to keep in mind that the Peet-Grady Method gives comparative values between two or more products and that the true comparative values between two or more products will only be brought out when sprays are toxic enough to give a kill of approximately 50 per cent on house flies in twenty-four hours or the kill should be somewhere near to the kill value of the Official Control Insecticide (O.C.I.)

Immediately after the December, 1936, Meeting of the N.A.I.D.M., the Chairman, Dr. Alfred Weed, of the Insecticide Standardization Committee, appointed the writer as Chairman of a sub-committee to conduct an investigation for the proper evaluation of semi-concentrates or high kill sprays that are being offered to the trade in certain local areas, especially to the industrial and institutional trade.

The only other co-operator in this work was the Bureau of Entomology and Plant Quarantine which has a working agreement with the Officers of the N.A.I.D.M.A. to assist in certain investigatory work that may eventually result in developing facts that will be of mutual benefit. All of the arrangements for this work were set forth in the office of Dr. Lon Hawkins, with the understanding that the samples to be tested were to be prepared in the Insecticide Laboratory of McCormick & Company, Inc., duplicate samples to be sent to the Bureau of Entomology and Plant Quarantine to be tested by Mr. W. N. Sullivan by the Campbell Turn-Table Method, while McCormick & Company would test these samples according to the standard procedure of the Peet-Grady Method. It was further agreed that data accumulated by both of these laboratories would be presented as separate reports in the same issue of "SOAP".

At the outset of this project, it was deemed advisable to first pre-

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MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady — Series I
INSECT Musca Domestica — Test No. 2
MATERIAL I-2650 Extract of Pyrethrum 300mg/dl.

EXP NO	DATE	INSECT BATCH	AGE BY PLY NO.	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN IN MIN.	% DOWN IN MIN.	NO DEAD 24 HRS.	% DEAD 24 HRS.	NO DEAD 48 HRS.	% DEAD 48 HRS.	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY
1	3/2/37	23C.				103	100	97	88	86				
2	"	"				103	101	98	85	83				
3	3/3/37	24C.				100	94	94	82	82				
4	"	"				104	101	97	95	91				
5	"	"				101	100	99	92	91				
6	"	"				104	102	98	93	89				
7	3/4/37	25C.				109	109	100	102	94				
8	"	"				102	102	100	95	93				
9	"	"				99	98	99	84	85				
10	"	"				105	103	98	86	82				
Total						1030	1010	98	901	87				
Av.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady — Series I
INSECT Musca Domestica — Test No. 2
MATERIAL I-2651 Extract of Pyrethrum 400mg/dl.

EXP NO	DATE	INSECT BATCH	AGE BY PLY NO.	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN IN MIN.	% DOWN IN MIN.	NO DEAD 24 HRS.	% DEAD 24 HRS.	NO DEAD 48 HRS.	% DEAD 48 HRS.	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY
1	3/2/37	23C.				107	107	100	94	88				
2	"	"				105	105	100	95	90				
3	3/3/37	24C.				102	101	99	100	98				
4	"	"				103	102	99	96	93				
5	"	"				108	107	99	102	94				
6	"	"				107	107	100	96	90				
7	3/4/37	25C.				101	98	97	96	95				
8	"	"				110	110	100	106	96				
9	"	"				100	99	99	96	96				
10	"	"				101	98	97	88	87				
Total						1044	1034	99	968	93				
AV.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady — Series I
INSECT Musca Domestica — Test No. 2
MATERIAL Standard-Official Control Insecticide

EXP NO	DATE	INSECT BATCH	AGE BY PLY NO.	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN IN MIN.	% DOWN IN MIN.	NO DEAD 24 HRS.	% DEAD 24 HRS.	NO DEAD 48 HRS.	% DEAD 48 HRS.	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY
1	3/2/37	23C.				110	107	97	75	68				
2	"	"				111	107	96	65	59				
3	3/3/37	24C.				107	104	97	56	54				
4	"	"				101	99	98	60	59				
5	"	"				107	104	97	69	64				
6	"	"				107	105	98	50	47				
7	3/4/37	25C.				105	103	98	63	60				
8	"	"				106	104	98	62	58				
9	"	"				106	105	99	54	51				
10	"	"				105	101	96	67	64				
Total						1065	1039	98	623	59				
AV.														

pare pyrethrum oil sprays of varying concentrations and establish their true value by comparing them with the O.C.I. which was first used by the industry during the latter part of 1936. At that time the O.C.I. was known to yield a kill varying from 50 to 60 per cent of house flies in twenty-four hours in a number of Peet-Grady units. Likewise when analyzed by the Seil Method, it was found to contain approximately 90 mgs. per 100 cc. Using the above facts as a basis, four pyrethrum sprays were prepared containing 100[a], 200[b], 300[c] and 400[d] mgs. of pyrethrins per 100 cc. respectively. The chemical assay was conducted in accord with the H. A. Seil Method as published in "SOAP" May 1934. The sprays were then diluted to the respective lower concentrations, giving us a total of ten prepared samples. In all instances, two prepared samples were tested with one sample of the O.C.I. which means that one-third of the flies of every batch were tested on the check sample. In the preparation of all samples, the carrying solvent was Deo Base.

After each individual test, the Peet-Grady chamber was thoroughly ventilated, the exhaust going to the outside of the building and the walls were carefully wiped, first with a rag wet with soapy water, followed with a cloth moist with denatured alcohol.

Following are details of the tests in Series I, accompanied with a curve and a Summary Table:

SUMMARY TABLE—SERIES I

Test No.	Sample No.	Number of Insects	Mgs. Pyrethrins per 100 cc. 100a	200b	300c	400d	% Dead in 24 hours O.C.I.
1	a	1069	51	73			
	b	1049					
	O.C.I.	1053					53
2	c	1030			87	93	
	d	1044					
	O.C.I.	1065					59
3	b	1034	50	73			
	c	1043					
	O.C.I.	1042					51
4	c	1048	51		81		
	d	1051					
	O.C.I.	1040					44
5	c	1045	53	+80			
	d	1050					
	O.C.I.	1031					52

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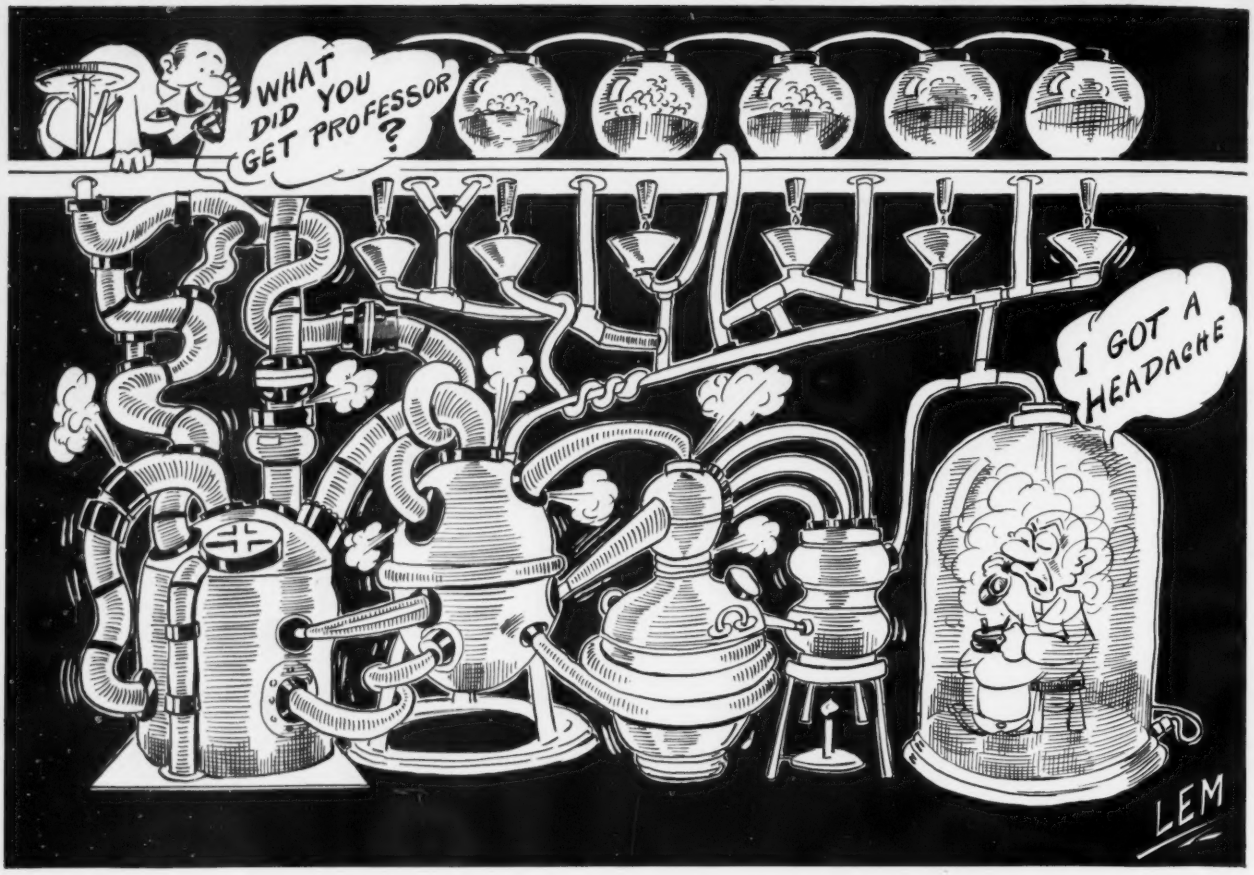

While we are sorry about the Professor's headache, we cannot stop to sympathize because we're in a hurry to say that we are now in a position to offer:

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AUBEPINE LIQUID
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BENZYL ACETATE F. F. C.
BENZYL ALCOHOL F. F. C.
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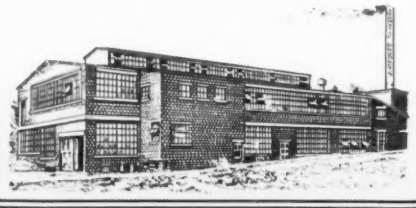
BENZYL BUTYRATE
BENZYL CINNAMATE
BENZYL FORMATE
BENZYL ISO EUGENOL
BENZYL PROPIONATE
BENZYL SALICYLATE
BROMSTYROL
CINNAMIC ALCOHOL
CINNAMIC ALDEHYDE
CINNAMYL ACETATE
CITRAL PURE
CITRONELLOL
COUMARIN
DIMETHYL HYDROQUINONE
DIPHENYL OXIDE
ETHYL BENZOATE
EUGENOL
GERANIOL EXTRA
HELIOTROPINE CRYSTALS
HYDROXYCITRONELLAL
IONONE PURE
IONONE ALPHA
ISO EUGENOL EXTRA
LINALOOL FROM BOIS DE ROSE
LINALYL ACETATE FROM SHIU 93/94%



LINALYL ACETATE FROM BOIS DE ROSE 93/94%
METHYL CINNAMATE
METHYL EUGENOL
METHYL IONONE
METHYL SALICYLATE
PHENYL ACETALDEHYDE PURE
PHENYL ETHYL ACETATE
PHENYL ETHYL ALCOHOL
RHODINOL
RHODINYL ACETATE
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MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL B-200mg/dl. diluted to 100mg/dl. with Deo-Base.

Series I
Test No. 3

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	3/12/37	32C.				107	101	94	56	51						
2	"	"				105	104	99	62	59						
3	"	"				106	102	96	63	59						
4	3/15/37	34C.				100	98	98	69	69						
5	3/15/37	34C.				100	100	100	55	55						
6	"	"				102	91	90	52	51						
7	"	"				92	92	94	34	35						
8	3/16/37	35C.				103	99	96	50	49						
9	"	"				102	97	95	50	49						
10	"	"				106	99	93	47	44						
Total						1004	967	96	517	50						
Av.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL C-34(mg/dl. diluted to 200 mg/dl. with Deo-Base.

Series I
Test No 3

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	3/12/37	32C.				107	106	99	77	72						
2	"	"				98	96	98	76	78						
3	"	"				108	107	99	91	84						
4	3/15/37	34C.				104	93	89	73	70						
5	"	"				103	101	98	85	83						
6	"	"				108	107	99	86	79						
7	"	"				104	101	97	83	80						
8	3/16/37	35C.				105	102	97	72	69						
9	"	"				104	101	97	71	68						
10	"	"				102	97	95	78	74						
Total						1043	1011	97	757	73						
Av.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL Standard-Official Control Insecticide

Series I
Test No. 3

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	3/12/37	32C.				106	106	100	77	73						
2	"	"				103	102	99	69	67						
3	"	"				105	104	99	65	62						
4	3/15/37	34C.				104	100	96	66	63						
5	"	"				100	93	93	37	37						
6	"	"				102	99	97	41	40						
7	"	"				106	103	97	47	44						
8	3/16/37	35C.				107	101	94	55	51						
9	"	"				101	97	96	51	50						
10	"	"				108	105	97	44	41						
Total						1043	1010	97	531	51						
Av.																

Looking over the Summary Table of Series I, it can be seen at a glance that the kills obtained with all of the 100 mgs. concentrations are in close accord with each other, as well as in close proximity with the kills obtained from the O.C.I. A careful study of above results makes it reasonable to conclude that this procedure will make it possible to more nearly determine the true value of semi-concentrates or high kill sprays which have for their toxic principle Pyrethrum alone by diluting them to a sufficient degree with a suitable insecticide base oil so as to closely approximate the kill value of the O.C.I.

In Series II of this investigation it was decided to prepare several samples of semi-concentrates or high kill sprays in accord with formulae which have been published in conjunction with an invitation for bids from the insecticide industry. These samples were prepared in accordance with specifications N.Y.G.D., No. 334-B, November 20, 1935. Under Section V, No. 2, they set forth specifications for three different combination sprays:

a. Not less than 0.3 per cent of pyrethrins and 0.1 per cent rotenone. Derris extractives are permissive if the insecticide thereby contains not less than 0.1 per cent rotenone.

b. Not less than 0.3 per cent pyrethrins and aliphatic thiocyanates corresponding to a content of not less than 0.78 per cent of thiocyanoacetic acid (approximately 2½ per cent lethane).

c. Aliphatic thiocyanates corresponding to a content of not less than 2.34 per cent of thiocyanoacetic acid (approximately 7½ per cent lethane) plus 0.1 per cent of rotenone. Derris extractives are permissive if the insecticide thereby contains not less than 0.1 per cent rotenone.

When compounding the above formulae, Deo Base was the petroleum distillate used. The Pyrethrum element was incorporated by using the proper quantities of a No. 20 Pyrethrum Extract that was prepared to contain 2.4 per cent Pyrethrins (Seil Method). The Rotenone element was

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MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca domestica
MATERIAL 0-300mg/ml. dilution to 1 Kero./Gl. with Deo-Base.

Series I
Test No. 4

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MINS.	DOWN 10 MIN	NO DEAD 24 HRS	DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY
1	3/1/37	380.				100	99	99	42	42				
2	"	"				100	97	97	44	45				
3	3/17/37	380.				104	101	97	65	63				
4	"	"				100	98	98	64	64				
5	"	"				104	102	98	72	71				
6	"	"				106	102	96	61	58				
7	3/1/37	370.				110	102	93	52	46				
8	"	"				107	103	96	65	60				
9	"	"				98	91	93	41	42				
10	"	"				100	99	99	41	40				
Total						1048	994	94	554	61				
AV.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca domestica
MATERIAL 0-400mg. Gls. dilute to 400mg. Gl/ with Deo-Base.

Series I
Test No. 4

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN.	DOWN 10 MIN	NO DEAD 24 HRS	DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY
1	3/16/37	380.				104	102	97	82	79				
2	"	"				104	104	100	79	76				
3	3/17/37	380.				104	101	97	92	86				
4	3/17/37	"				104	104	96	96	91				
5	"	"				104	103	98	82	76				
6	"	"				101	94	98	80	79				
7	3/18/37	370.				110	106	96	101	84				
8	"	"				101	99	98	73	72				
9	"	"				103	96	93	91	88				
10	"	"				100	104	99	76	74				
Total						1041	1013	97	826	81				
AV.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL Standard-C Pigial Pyrecl Insecticide

Series I
Test No 4

EXP NO	DATE	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN.	DOWN 10 MIN	NO DEAD 24 HRS	DEAD 24 HRS	NO DEAD 48 HRS	DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY
1	2/1/37	350.				104	101	97	51	49				
2	"	"				107	99	93	36	33				
3	3/17/37	380.				100	101	96	46	46				
4	"	"				100	97	97	46	46				
5	"	"				106	103	97	62	59				
6	"	"				102	94	92	66	64				
7	3/18/37	370.				105	102	96	40	38				
8	"	"				100	91	91	43	43				
9	"	"				104	98	92	46	44				
10	"	"				105	103	98	61	58				
Total						1040	999	96	499	44				
AV.														

incorporated into these materials by using a solution containing one gram of Rotenone per 100 c.c. in camphor oil sassafrassy, while Lethane 384, as supplied by the manufacturer, was used in the specified amounts.

Summary Table—Series II

Test No.	Sample No.	No. of Insects	% Dead in 24 Hrs.
1	A	1027	96
	A1	1039	88
	O.C.I.	1024	51
2	A2	1032	78
	B	1043	96
	O.C.I.	1040	49
3	B1	1062	86
	B2	1043	86
	O.C.I.	1046	49
4	C	1035	94
	O.C.I.	1043	59
5	C1	1029	94
	O.C.I.	1055	59
6	C2	1023	69
	O.C.I.	1062	70

The original concentrations of these three materials tested in Series II all gave a better than 90 per cent kill on house flies in twenty-four hours, which places these three materials in the same classification as the 400 mgs. concentrations in Series I when tested on house flies. Each of these three materials was then diluted with Deo Base as is shown in the "Legend" on the curve of the Summary Table in this series of tests.

After the tests were completed on the samples prepared by diluting the original materials as indicated above, it was evident that probably another dilution should have been made so as to get a concentration that would yield a kill practically the same as that obtained by the O.C.I. These additional tests, however, could not be completed in time to include them in this report.

Another phase of the tests in Series II that needs further investigation is the irregular results obtained with the diluted sample of material "C." When making the tests in Series I and on materials "A" and "B" in Series II, one-third of the flies from each batch were tested on the O.C.I. After completing tests in this fashion on material "C" and samples "C1"

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MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL D-400mg./1a. diluted to 200mg./dl. with Base. Series I Test No. 5

EXP NO	DATE	INSECT BATCH	AGE OF FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	3/14/37	38C.				107	101	94	92	86						
2	"	"				101	90	89	81	80						
3	"	"				103	99	96	82	80						
4	3/22/37	40C.				105	100	95	86	82						
5	"	"				106	104	98	83	78						
6	"	"				100	97	97	80	80						
7	"	"				108	106	98	87	81						
8	3/23/37	41C.				104	104	100	91	78						
9	"	"				110	104	95	85	75						
10	"	"				101	100	99	76	75						
Total						1046	1011	97	831	80						
Av.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL D-400 mg./dl. diluted to 100mg./dl. with Base. Series I Test No. 5

EXP NO	DATE	INSECT BATCH	AGE OF FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	3/13/37	38C.				103	90	87	54	52						
2	"	"				113	99	88	47	42						
3	"	"				106	99	93	43	40						
4	3/22/37	40C.				110	100	91	67	61						
5	"	"				100	95	95	60	60						
6	"	"				98	91	93	55	56						
7	"	"				105	94	90	52	50						
8	3/23/37	41C.				106	101	95	57	54						
9	"	"				106	99	93	55	52						
10	"	"				103	97	94	69	67						
Total						1050	965	92	554	53						
Av.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

STANDARD SPECIFICATIONS

METHOD USED Peet-Grady
INSECT Musca Domestica
MATERIAL Standard-Official Control Insecticide Series I Test No. 5

EXP NO	DATE	INSECT BATCH	AGE OF FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD 48 HRS	% DEAD 48 HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	3/13/37	38C.				101	98	97	37	37						
2	"	"				105	101	96	51	49						
3	"	"				107	103	96	53	50						
4	3/22/37	40C.				103	98	95	55	53						
5	"	"				100	93	93	41	41						
6	"	"				110	103	94	51	46						
7	"	"				98	90	94	46	47						
8	3/23/37	41C.				105	102	97	79	77						
9	"	"				101	95	94	62	61						
10	"	"				106	99	94	59	56						
Total						1031	980	95	534	52						
Av.																

and "C2" there was noticed to be a distinct build-up in the kill obtained on the O.C.I. Therefore, material "C" and samples "C1" and "C2" were again tested, but this time using 50 per cent of every batch of flies on the O.C.I., also making fewer tests in any half-day period. This, however, did not clear up the irregularity completely. The kill obtained with the O.C.I. Insecticide in Test No. 6 of Series II, was 70 per cent dead in twenty-four hours. The resistance of the flies used in tests Nos. 4, 5 and 6 was also checked on the Campbell Turn-Table which indicated no material difference in the resistance of the flies used in these tests.

Preliminary tests also indicated that when Lethane Rotenone combination sprays are compared with the O.C.I., not more than two tests should be made in a Peet-Grady chamber during any half-day period, although the chamber be wiped out as described above. Otherwise, a noticeable build-up in the kill will be observed. It is therefore the opinion of the writer that tests Nos. 4, 5 and 6 should be repeated on a basis where only two tests are made in the morning and two tests in the afternoon, that is, one with the Lethane-Rotenone combination and one with the O.C.I. and each time alternating their order. Furthermore, materials "A," "B" and "C" should be diluted at least one part of the original concentration with three parts of a suitable insecticide base oil so that the diluted sample to yield a kill in closer proximity with the kill of O.C.I., thereby giving you a truer value of the original semi-concentrate or high kill spray.

By studying all of the data presented herein, it is possible to draw one very definite conclusion: To ascertain the true value of a semi-concentrate or a high kill spray, that material should be diluted to such a concentration so that its killing power will fall somewhere near the 50 per cent kill mark or at least should closely approximate that of the O.C.I.

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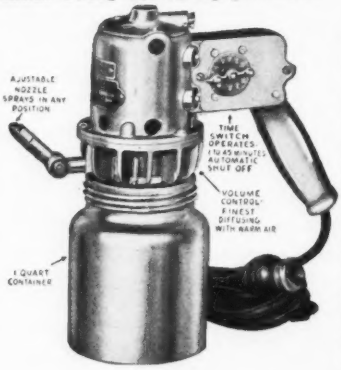
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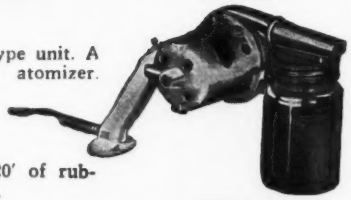
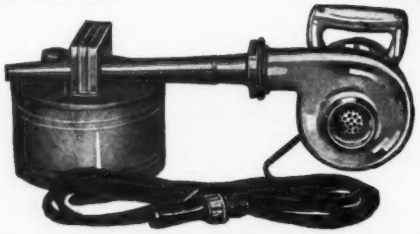


Model 50 Fan Type unit. A fine insecticide atomizer. Sprays distance of 8′ to 10′. 1/8 H.P. G.E. Universal Motor, 1 pint glass jar. 20′ of rubber covered cable.



Model 6 Fan Type unit. Will break insecticide into a very fine mist. Sprays 18′ to 20′. 1/3 H.P. G.E. Universal Motor. Norma Ball Bearings, 1 gallon metal container. This model is for larger institutions, warehouses, industrials, etc., and is also highly recommended for moth-proofing solutions. Write today for complete description and circulars.

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MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica — Test No 1
MATERIAL: I-2724 Sample "A"

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
51% dead 24 hrs.

EXP NO	DATE 1937	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MINS	% DOWN 10 MINS	NO DEAD 24 HRS.	% DEAD 24 HRS	NO DEAD @ HRS	% DEAD @ HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	4/22	67C				103	101	98	95	92						
2	"	"				98	97	99	93	95						
3	4/23	68C				101	99	98	97	96						
4	"	"				102	101	99	99	97						
5	"	"				106	106	100	106	100						
6	4/26	71C				101	101	100	100	99						
7	"	"				108	108	100	105	97						
8	"	"				106	106	100	101	95						
9	"	"				103	103	100	98	93						
10	"	"				99	99	100	95	98						
Total						1027	1021	99	987	96						
Av.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica — Test No 1
MATERIAL: I-2724 Sample "A" -- Diluted 1 plus 1 with Deo Base

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
51% dead 24 hrs.

EXP NO	DATE 1937	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD @ HRS	% DEAD @ HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	4/22	67C				103	102	99	78	76						
2	"	"				103	101	98	85	83						
3	"	68C				105	104	99	101	96						
4	"	"				103	103	100	92	89						
5	"	"				106	105	100	96	91						
6	4/26	71C				102	97	95	90	88						
7	"	"				107	104	97	94	88						
8	"	"				103	103	100	99	96						
9	"	"				108	108	100	91	84						
10	"	"				100	100	100	90	90						
Total						1039	1027	99	915	88						
Av.																

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica — Test No 1
MATERIAL: Standard-Official Control Insecticide

STANDARD SPECIFICATIONS

EXP NO	DATE 1937	INSECT BATCH	AVE WT FLY MG	TOTAL NO INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO DOWN 10 MIN	% DOWN 10 MIN	NO DEAD 24 HRS	% DEAD 24 HRS	NO DEAD @ HRS	% DEAD @ HRS	CHAMBER TEMP °F	PER CENT RELATIVE HUMIDITY		
1	4/22	67C				98	90	95	42	44						
2	"	"				106	96	91	38	36						
3	4/23	68C				103	100	97	67	65						
4	"	"				99	98	99	55	56						
5	"	"				109	107	98	48	44						
6	4/26	71C				100	94	94	53	53						
7	"	"				106	99	94	51	48						
8	"	"				104	100	96	67	64						
9	"	"				108	97	90	49	45						
10	"	"				108	97	90	53	52						
Total						1084	978	96	523	51						
Av.																

sults in this report and comparing them with the results obtained by Mr. Sullivan when testing the same materials on the Campbell Turn-Table Method, certain similarities or dissimilarities may be apparent which should have a very distinct bearing as to the relative value of the two methods of testing liquid insecticides in comparison with the O.C.I. A preliminary report regarding the "Comparative Results Using the Peet-Grady Method and The Campbell Turn-Table Method" appeared in "Soap," September, 1936.

(*Additional test figure charts are given on succeeding pages.—Ed.*)

Drug Group Meets Sept. 17

The second annual fall meeting and golf tournament of the Drug, Chemical and Allied Trades Section of the New York Board of Trade has been scheduled for September 17th and 18th at Buckwood Inn, Shawnee-on-Delaware, Pennsylvania. The entire facilities of the inn will be turned over to members and guests of the section for this particular week-end. The business program for the meeting will be under the direction of Harry J. Schnell of Oil, Paint & Drug Publishing Co. Charles E. Kelly of Hagerty Bros. & Co., will serve as chairman of the golf committee, while Robert B. Magnus of Magnus, Mabee & Reynard, Inc., will be in charge of transportation. Reservations for the meeting should be directed to the office of the secretary, Ray Schlotterer, at 41 Park Row, New York.

American Home Shows $2.09

Tentative report of American Home Products Corp., Jersey City, N. J., and subsidiaries indicates a net profit for the six months ended June 30, 1937, of $1,552,661.27, equivalent to $2.09 a share on 741,060 shares of stock outstanding, after deducting depreciation interest and normal federal income tax, but before provision for surtax on undistributed profits.

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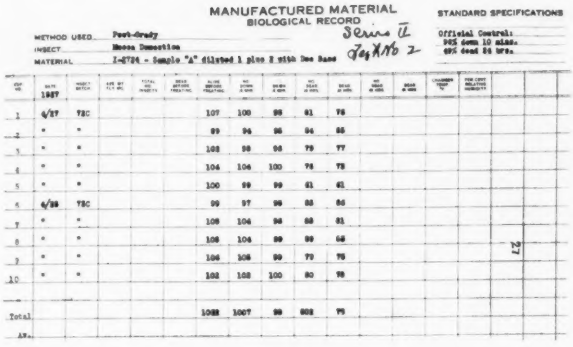
High Kill Insect Sprays—(Continued)

Additional detailed test figures in connection with the report by Dr. A. Edison Badertscher on a study and discussion of semi-concentrate sprays and the proper method of their evaluation, are given in the charts below. These charts although smaller in size for the sake of mechanical convenience are a continuation of those published on preceding pages and are of equal importance. (Article starts on pg. 91.)—Editor.

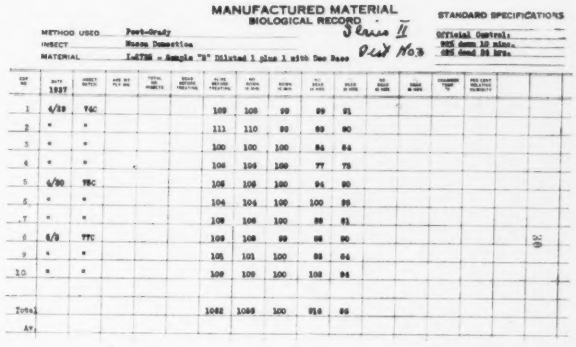


MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica
MATERIAL: I-6724 - Sample "A" diluted 1 plus 2 with Dec Base — July No. 2

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
69% dead 24 hrs.

EXP. NO.	DATE 1937	INSECT BATCH	AGE BY PCT. NO.	TOTAL NO. INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO. DOWN IN 5 MIN.	DOWN IN 5 MIN.	NO. DEAD AT 10 MIN.	DEAD AT 10 MIN.	NO. DEAD AT 24 HRS.	DEAD AT 24 HRS.	CHAMBER TEMP.	PER CENT RELATIVE HUMIDITY		
1	6/27	72C				107	100	93	81	76						
2	"	"				99	94	86	84	85						
3	"	"				103	98	95	79	77						
4	"	"				104	104	100	78	75						
5	"	"				100	99	99	81	81						
6	6/28	72C				99	97	96	85	86						
7	"	"				108	104	96	88	81						
8	"	"				108	104	99	89	86						
9	"	"				106	105	99	73	75						
10	"	"				102	102	100	80	78						
Total						1082	1067	99	802	75						
Av.																

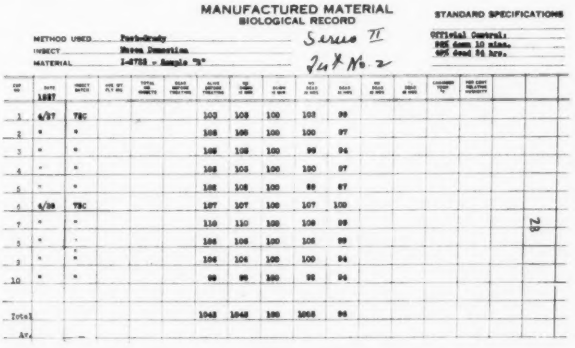


MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica
MATERIAL: I-6725 - Sample "B" Diluted 1 plus 1 with Dec Base — Peet No. 3

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
69% dead 24 hrs.

EXP. NO.	DATE 1937	INSECT BATCH	AGE BY PCT. NO.	TOTAL NO. INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO. DOWN IN 5 MIN.	DOWN IN 5 MIN.	NO. DEAD AT 10 MIN.	DEAD AT 10 MIN.	NO. DEAD AT 24 HRS.	DEAD AT 24 HRS.	CHAMBER TEMP.	PER CENT RELATIVE HUMIDITY		
1	6/29	74C				109	108	99	89	81						
2	"	"				111	110	99	89	80						
3	"	"				100	100	100	84	84						
4	"	"				106	106	100	77	73						
5	6/30	75C				108	108	100	94	90						
6	"	"				104	104	100	100	96						
7	"	"				108	108	100	88	81						
8	6/3	77C				108	108	99	88	80						
9	"	"				101	101	100	88	84						
10	"	"				108	108	100	108	94						
Total						1082	1082	100	916	85						
Av.																

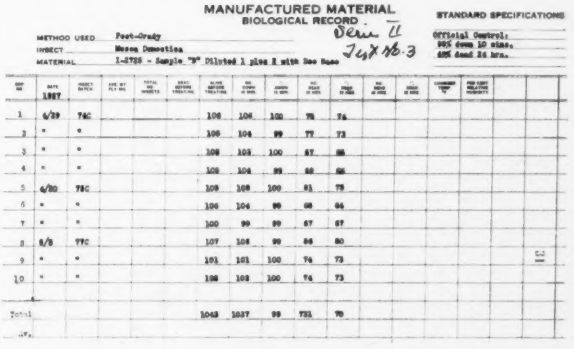


MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica
MATERIAL: I-6726 - Sample "C" — July No. 2

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
69% dead 24 hrs.

EXP. NO.	DATE 1937	INSECT BATCH	AGE BY PCT. NO.	TOTAL NO. INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO. DOWN IN 5 MIN.	DOWN IN 5 MIN.	NO. DEAD AT 10 MIN.	DEAD AT 10 MIN.	NO. DEAD AT 24 HRS.	DEAD AT 24 HRS.	CHAMBER TEMP.	PER CENT RELATIVE HUMIDITY		
1	6/27	72C				102	102	100	102	99						
2	"	"				102	102	100	100	97						
3	"	"				102	102	100	99	96						
4	"	"				102	102	100	100	97						
5	"	"				102	102	100	99	97						
6	6/28	72C				107	107	100	107	100						
7	"	"				110	110	100	108	99						
8	"	"				106	106	100	106	99						
9	"	"				104	104	100	100	96						
10	"	"				99	99	100	99	96						
Total						1043	1043	100	1015	98						
Av.																

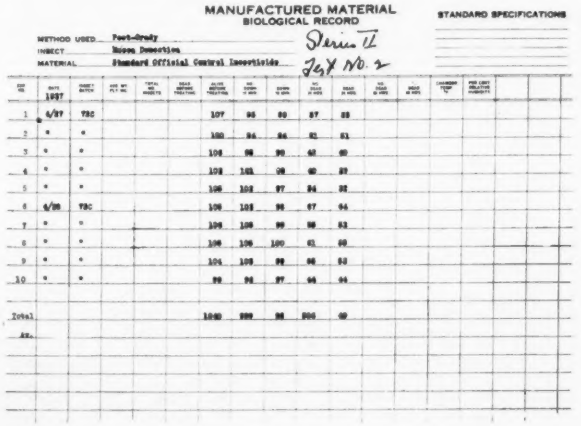


MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica
MATERIAL: I-6728 - Sample "D" Diluted 1 plus 2 with Dec Base — July No. 3

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
69% dead 24 hrs.

EXP. NO.	DATE 1937	INSECT BATCH	AGE BY PCT. NO.	TOTAL NO. INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO. DOWN IN 5 MIN.	DOWN IN 5 MIN.	NO. DEAD AT 10 MIN.	DEAD AT 10 MIN.	NO. DEAD AT 24 HRS.	DEAD AT 24 HRS.	CHAMBER TEMP.	PER CENT RELATIVE HUMIDITY		
1	6/29	74C				106	106	100	78	74						
2	"	"				106	104	99	77	73						
3	"	"				108	103	100	87	88						
4	"	"				103	104	99	88	86						
5	6/30	75C				109	108	100	81	79						
6	"	"				106	104	99	88	86						
7	"	"				100	99	99	87	87						
8	6/3	77C				107	104	99	86	80						
9	"	"				101	101	100	74	73						
10	"	"				108	103	100	74	73						
Total						1043	1037	99	731	70						
Av.																

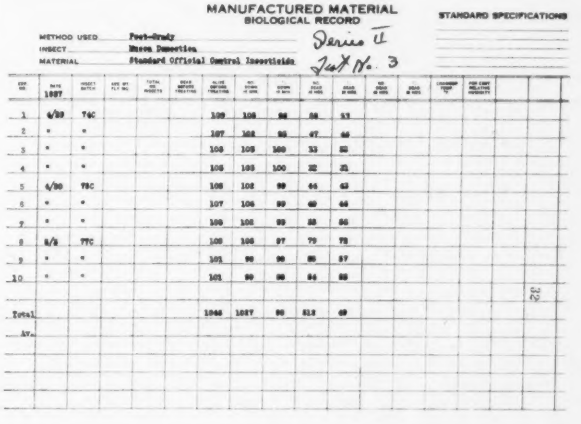


MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica
MATERIAL: Standard Official Control Insecticide — July No. 2

STANDARD SPECIFICATIONS

EXP. NO.	DATE 1937	INSECT BATCH	AGE BY PCT. NO.	TOTAL NO. INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO. DOWN IN 5 MIN.	DOWN IN 5 MIN.	NO. DEAD AT 10 MIN.	DEAD AT 10 MIN.	NO. DEAD AT 24 HRS.	DEAD AT 24 HRS.	CHAMBER TEMP.	PER CENT RELATIVE HUMIDITY		
1	6/27	72C				107	95	89	87	88						
2	"	"				100	94	94	81	81						
3	"	"				106	98	90	62	60						
4	"	"				103	103	98	60	59						
5	"	"				106	102	97	84	82						
6	6/28	72C				106	103	96	87	84						
7	"	"				106	106	99	96	83						
8	"	"				106	106	100	61	60						
9	"	"				104	103	98	86	83						
10	"	"				98	96	97	94	94						
Total						1045	999	96	906	87						
Av.																



MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Peet-Grady — Series II
INSECT: Musca Domestica
MATERIAL: Standard Official Control Insecticide — July No. 3

STANDARD SPECIFICATIONS

EXP. NO.	DATE 1937	INSECT BATCH	AGE BY PCT. NO.	TOTAL NO. INSECTS	DEAD BEFORE TREATING	ALIVE BEFORE TREATING	NO. DOWN IN 5 MIN.	DOWN IN 5 MIN.	NO. DEAD AT 10 MIN.	DEAD AT 10 MIN.	NO. DEAD AT 24 HRS.	DEAD AT 24 HRS.	CHAMBER TEMP.	PER CENT RELATIVE HUMIDITY		
1	6/29	74C				109	108	96	58	53						
2	"	"				107	102	92	67	66						
3	"	"				103	103	100	33	32						
4	"	"				106	103	100	22	21						
5	6/30	75C				108	102	99	66	62						
6	"	"				107	106	99	69	66						
7	"	"				109	108	99	88	86						
8	6/3	77C				108	108	97	79	78						
9	"	"				101	99	99	86	87						
10	"	"				101	99	99	84	86						
Total						1046	1027	98	813	69						
Av.																

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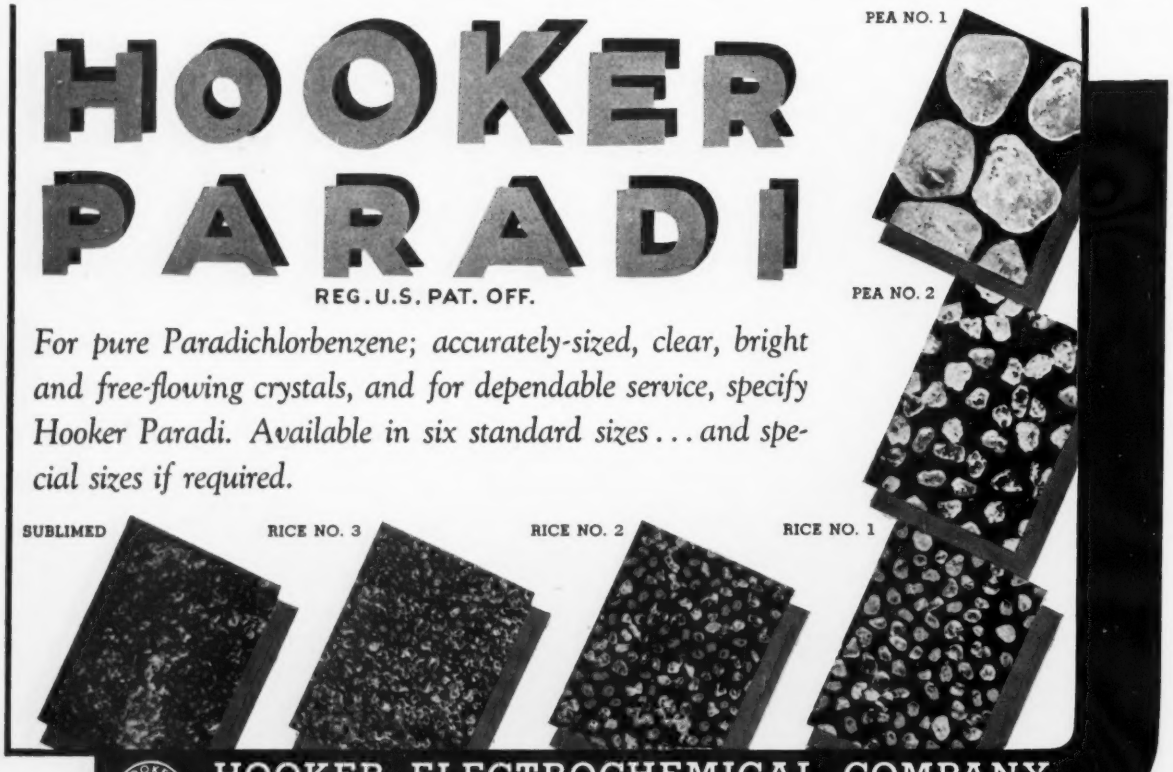

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7529

High Kill Insect Sprays—(Continued)

Additional detailed test figures in connection with the report by Dr. A. Edison Badertscher on a study and discussion of semi-concentrate sprays and the proper method of their evaluation, are given in the charts below. These charts although smaller in size for the sake of mechanical convenience are a continuation of those published on preceding pages and are of equal importance. (Article starts on pg. 91.)—Editor.

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Foot-Grady — Series II
INSECT: Musca Domestica
MATERIAL: I-2726 - Sample "C" — Test No. 4

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
90% dead 24 hrs.

Set No.	Date 1937	Insect Batch	Age at Test Min.	Total No. Insects	Dead Before Treating	Alive Before Treating	No. Alive 5 Min.	Alive 5 Min.	No. Dead at 10 Min.	Dead at 10 Min.	No. Dead at 24 Hrs.	Dead at 24 Hrs.	Chamber Temp. °F.	Per Cent Relative Humidity
1	8/9	77C				104	104	100	101	97				
2	"	"				108	107	100	98	93				
3	8/4	78C				100	100	100	99	99				
4	"	"				107	107	100	100	93				
5	8/9	79C				106	106	100	99	93				
6	8/11	84C				104	104	100	99	94				
7	"	"				107	107	100	101	94				
8	8/14	87C				103	103	100	99	93				
9	"	"				106	106	100	100	95				
10	"	"				99	99	100	97	93				
Total						1038	1038	100	973	94				
Av.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Foot-Grady — Series II
INSECT: Musca Domestica
MATERIAL: Standard Official Control Insecticide — Test No. 5

STANDARD SPECIFICATIONS

Set No.	Date 1937	Insect Batch	Age at Test Min.	Total No. Insects	Dead Before Treating	Alive Before Treating	No. Alive 5 Min.	Alive 5 Min.	No. Dead at 10 Min.	Dead at 10 Min.	No. Dead at 24 Hrs.	Dead at 24 Hrs.	Chamber Temp. °F.	Per Cent Relative Humidity
1	8/8	77C				101	99	99	42	42				
2	"	"				108	107	99	61	57				
3	8/4	78C				106	106	99	73	69				
4	"	"				104	104	100	80	80				
5	8/9	79C				99	94	95	61	64				
6	8/12	86C				110	107	97	74	67				
7	"	"				106	106	100	66	62				
8	8/14	87C				115	111	96	69	61				
9	"	"				104	103	99	62	60				
10	"	"				107	106	99	62	58				
Total						1055	1043	99	630	59				
Av.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Foot-Grady — Series II
INSECT: Musca Domestica
MATERIAL: Standard Official Control Insecticide — Test No. 4

STANDARD SPECIFICATIONS

Set No.	Date 1937	Insect Batch	Age at Test Min.	Total No. Insects	Dead Before Treating	Alive Before Treating	No. Alive 5 Min.	Alive 5 Min.	No. Dead at 10 Min.	Dead at 10 Min.	No. Dead at 24 Hrs.	Dead at 24 Hrs.	Chamber Temp. °F.	Per Cent Relative Humidity
1	8/8	77C				101	99	99	42	42				
2	"	"				108	107	99	61	57				
3	8/4	78C				106	106	99	73	69				
4	"	"				104	104	100	80	80				
5	8/9	79C				99	94	95	61	64				
6	8/11	84C				108	108	100	94	93				
7	"	"				108	108	100	76	69				
8	8/14	87C				113	111	98	69	61				
9	"	"				104	103	99	62	60				
10	"	"				107	104	99	62	58				
Total						1048	1023	99	618	59				
Av.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Foot-Grady — Series II
INSECT: Musca Domestica
MATERIAL: I-2726 - Sample "C" Diluted 1 plus 2 with Dee Base — Test No. 6

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
70% dead 24 hrs.

Set No.	Date 1937	Insect Batch	Age at Test Min.	Total No. Insects	Dead Before Treating	Alive Before Treating	No. Alive 5 Min.	Alive 5 Min.	No. Dead at 10 Min.	Dead at 10 Min.	No. Dead at 24 Hrs.	Dead at 24 Hrs.	Chamber Temp. °F.	Per Cent Relative Humidity
1	8/8	80C				106	106	100	88	83				
2	"	"				101	101	100	88	88				
3	8/10	83C				103	103	100	73	70				
4	"	"				103	101	99	83	80				
5	8/11	84C				103	103	100	73	71				
6	"	"				108	108	100	73	69				
7	"	"				102	102	100	66	64				
8	8/12	88C				100	100	100	71	71				
9	"	"				90	90	100	90	83				
10	"	"				102	102	100	77	73				
Total						1033	1021	100	710	69				
Av.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Foot-Grady — Series II
INSECT: Musca Domestica
MATERIAL: I-2726 - Sample "C" Diluted 1 plus 1 with Dee Base — Test No. 5

STANDARD SPECIFICATIONS
Official Control:
90% down 10 mins.
90% dead 24 hrs.

Set No.	Date 1937	Insect Batch	Age at Test Min.	Total No. Insects	Dead Before Treating	Alive Before Treating	No. Alive 5 Min.	Alive 5 Min.	No. Dead at 10 Min.	Dead at 10 Min.	No. Dead at 24 Hrs.	Dead at 24 Hrs.	Chamber Temp. °F.	Per Cent Relative Humidity
1	8/8	77C				97	97	100	68	71				
2	"	"				101	101	100	80	79				
3	8/4	78C				99	99	100	80	81				
4	"	"				104	104	100	81	78				
5	8/8	79C				107	107	100	80	75				
6	8/12	86C				107	107	100	81	76				
7	"	"				103	103	100	67	65				
8	8/14	87C				104	104	100	64	62				
9	"	"				108	108	100	74	70				
10	"	"				99	99	100	69	70				
Total						1029	1029	100	748	73				
Av.														

MANUFACTURED MATERIAL
BIOLOGICAL RECORD

METHOD USED: Foot-Grady — Series II
INSECT: Musca Domestica
MATERIAL: Standard Official Control Insecticide — Test No. 6

STANDARD SPECIFICATIONS

Set No.	Date 1937	Insect Batch	Age at Test Min.	Total No. Insects	Dead Before Treating	Alive Before Treating	No. Alive 5 Min.	Alive 5 Min.	No. Dead at 10 Min.	Dead at 10 Min.	No. Dead at 24 Hrs.	Dead at 24 Hrs.	Chamber Temp. °F.	Per Cent Relative Humidity
1	8/8	80C				101	99	99	86	85				
2	"	"				99	99	100	83	83				
3	8/10	83C				110	109	99	78	71				
4	"	"				113	112	100	86	86				
5	8/11	84C				100	100	99	80	78				
6	"	"				103	103	100	86	83				
7	"	"				100	100	100	74	68				
8	8/12	88C				108	107	99	77	73				
9	"	"				111	111	100	89	80				
10	"	"				103	103	99	84	81				
Total						2068	1064	99	761	70				
Av.														

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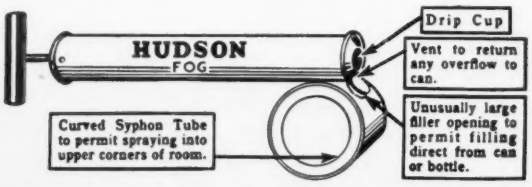
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FLUORIDES

By Dr. J. Jungmann

SOME fluorides are comparatively newcomers in the chemical field. Many of their uses and their applications for industrial purposes of today were practically unknown a few years ago. The elements fluorine from which the fluorides are derived does not exist free in nature. It is found combined with lime in the mineral fluorite, and with sodium and aluminum in cryolite. The isolation of this element resisted the efforts of many investigators until the French chemist Moissan succeeded in the year 1866 in obtaining the pure product by the electrolysis of hydrofluoric acid. Fluorine is a corrosive gas somewhat resembling chlorine. It belongs to the halogen family of which chlorine, bromine and iodine are the other members. Fluorine can be liquefied by the application of intense cold. It is also a constituent of bone, is found in the enamel of teeth, and exists in some plants.

The combination of fluorine with lime commonly known as fluorspar (calcium fluoride), CaF_2 is found more or less pure in many parts of the earth. Large deposits exist in the U. S. and are mined and milled in Kentucky, Illinois, Tennessee and others. The properties of Fluorspar as a flux have been known for a long time. The earliest mention on record dates back to the 15th century when the medieval chemist, Bacillius Valentinus, used it in the smelting of ores. Today, large quantities of fluorspar are used in the manufacture of steel, in the making of glass, as an ingredient in enamelled ware and in some building materials. When fluorspar is treated with sulfuric acid, hydrofluoric acid is liberated and sulfate of lime remains as a residue. Hydrofluoric acid when purified and concentrated is one of the most powerful and corrosive of acids. It has a great affinity for silica. For this reason it cannot be kept in glass bottles but is stored and shipped in containers of steel, rubber and wax. It is largely used for etching purposes, for treating graphite, removing rust, etc. It is the acid from which most of the fluorides are made.

Aluminum, ammonium, barium, magnesium, potassium, sodium and zinc fluorides are now manufactured on a large scale as all of these fluorides and many others have found valuable uses in the various industries as insecticides, for etching and polishing of glass, cleaning of stone, tile and marble, hardeners of cement and concrete, neutralizers of alkali in the textile and laundry industry and as preservers and disinfectants of organic compounds, etc.

Sodium fluoride is perhaps the most familiar fluoride to exterminators and insecticide manufacturers. It is the most widely used fluoride in the insecticide industry. It comes in the form of a white neutral powder (in New York and surroundings it must be tinted nile blue) and has proved highly efficient in the control of the various household pests. While officially rated as "poisonous" and it is undoubtedly so when a considerable quantity is swallowed, it is nevertheless perfectly safe when used by competent hands with intelligent care. When the thousands of tons of fluoride used annually as insecticides are considered, there remains the remarkable fact that not one well authenticated case of fatal poisoning by sodium fluoride is on record today.

Fluosilicates: Owing to the patient research work of the entomologists of the U. S. Department of Agriculture and those of the State Agricultural Experimental stations, these products have come into extensive use as agricultural insecticides. They are made from hydrofluosilicic acid and the respective bases. Hydrofluosilicic acid is made by dissolving a certain percentage of silica in hydrofluoric acid. It is also obtained as a by-product in the manufacture of superphosphates. The silica content in the fluosilicates lessens their solubilities and modifies their actions. As they dissolve more slowly, their effect is more gradual. When used as sprays or dusts, they do not burn or discolor vegetation and may be used without injury to the plant. The principal fluosilicates used as agricultural insecticides are aluminum fluosilicate, barium fluosilicate, calcium fluosilicate, and sodium fluosilicate. These products have rendered valuable services in the control of the bugs and beetles on truck farmers' crops, fruit trees, berry bushes, flower beds and conservatories. Sodium fluosilicate is considered by many experienced operators as a more powerful insecticide for household pests than sodium fluoride. Being an acid salt it is both a contact as well as a stomach poison which may account for its greater effectiveness.

Organic Fluorides: In this field much progress has been made in the last few years. The production of elementary fluorine has been greatly facilitated. Oxygen and nitrogen fluorides have been prepared. Fluorine and chlorine have been united in the same compound. Thus the future holds out great possibilities in organic fluorides. For refrigeration in households and in ice machines, the desideratum is for an easy volatile compound harmless to "man or beast" so that in case of leaky equipment no damage will result. Such a volatile compound must be non-inflammable or non-explosive. The fluorine gas difluordichloromethane CF_2Cl_2 seems to meet the specifications and is already on the market. Thus big industries are always on the lookout to exploit new compounds and discoveries that the public will buy because they add to the comforts of life.

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New Specification for

Water-Emulsion Floor Wax

A NEW specification for water-emulsion floor wax for the use of all departments and establishments of the U. S. Government has been approved by the Director of Procurement and becomes effective not later than November 15, 1937, in all purchases of water wax by Government departments. This specification may be put into effect at any time prior to that date by any Government purchasing agency if the agency desires to do so. In order that firms in the trade who are not familiar with this new specification may become acquainted with it, the important features have been extracted and reproduced here. Copies of the full specification may be obtained at five cents each from the Superintendent of Documents, Washington, D. C., by asking for Specification P-W-151.

Specifications for regular solvent liquid and paste floor waxes which have been in effect for the past year, are given in a separate booklet which is known as P-W-141. Salient features in the specification for water-emulsion wax follow:

A. Applicable Federal Specifications

A-1. The following Federal Specifications, of the issue in effect on date of invitation for bids, shall form a part of this specification:

P-S-561. Soap; Automobile.
LLL-L-351. Linoleum; Battleship.

B. Types and Grade

B-1. Floor Water-Emulsion Wax, as specified herein, shall be furnished in two types and in one grade.

Type I.—Regular.
Type II.—Concentrated.

D. General Requirements

D-1. The floor water-emulsion wax, when applied in accordance with the manufacturer's directions, shall dry to a lustrous finish without rubbing, buffing, or polishing. The film produced shall adhere firmly to the surface without checking, cracking, or peeling and shall be transparent and practically colorless.

D-2. The floor water-emulsion wax shall be suitable for use on sealed floors and floorings.

D-3. The floor water-emulsion wax shall have no objectionable odor.

E. Detail Requirements

E-1. The floor water-emulsion wax shall be a stable aqueous colloidal emulsion of waxes and resins. The emulsion shall be a free-flowing fluid that can readily be applied with an applicator such as lamb's wool, cotton cloth, or a mop to spread easily and homogeneously. The film so applied shall dry to a lustrous finish.

E-2. The floor water-emulsion wax shall meet the following requirements.

E-2a. *Type I.*—Regular.

E-2a (1). *Nonvolatile matter (total solids).*—Shall be not less than 12 percent.

E-2a (2). *Softening point of solids.*—Shall be not less than 80° C. (See paragraph F-3.)

E-2a (3). *Ash content (based on nonvolatile matter content).*—Shall not exceed 3.0 percent.

E-2a (4). *Free caustic alkali*—None.

E-2a (5). *Volatile solvents.*—Shall be free from petroleum distillates and other organic volatile solvents.

E-2a (6). *Water solubility.*—Shall be not more than 15 percent. (See paragraph F-7.)

E-2a (7). *Dilution properties.*—Shall be capable of dilution in any proportion with distilled water without breaking the emulsion.

E-2a (8). *Physical and performance tests.*—Shall meet the tests indicated under paragraph F-9.

E-2b. *Type II.*—Concentrated.

E-2b (1). *Nonvolatile matter (total solids).*—Shall be not less than 20 percent.

E-2b (2). *Softening point of solids.*—Shall be not less than 80° C. (See paragraph F-3.)

E-2b (3). *Ash content (based on nonvolatile matter content).*—Shall not exceed 3.0 percent.

E-2b (4). *Free caustic alkali.*—None.

E-2b (5). *Volatile solvents.*—Shall be free from petroleum distillates and other organic volatile solvents.

E-2b (6). *Water solubility.*—Shall be not more than 15 percent. (See paragraph F-7.)

E-2b (7). *Dilution properties.*—Shall be capable of dilution in any proportion with distilled water without breaking the emulsion.

E-2b (8). *Physical and performance tests.*—Shall meet the tests indicated under paragraph F-9.

F. Methods of Sampling, Inspection, and Tests

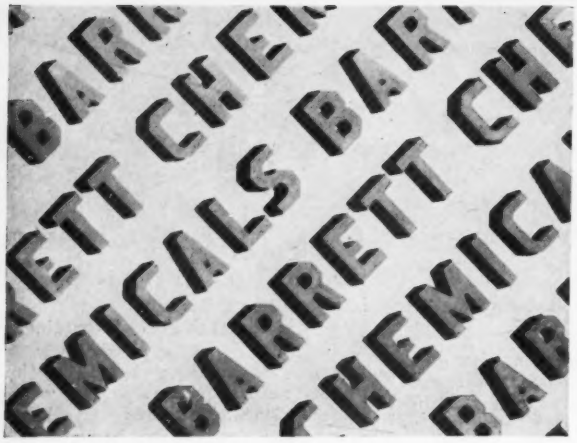
F-1. *Sampling.*—Samples of not less than one quart shall be taken at random from each lot of containers totaling not to exceed 1,000 gallons. All samples shall be taken by the inspector from thoroughly mixed, original unopened containers and placed in a clean, dry can or bottle which shall be securely stoppered and sent to the laboratory for test. The total sample shall not exceed 1 gallon.

F-2. *Nonvolatile matter (total solids).*—Place about 2 to 3 g. of original water-emulsion wax in a tarred porcelain crucible or dish. Heat the material over a steam bath and then in an oven at 105° to 110° C. to constant weight. Calculate the percentage of nonvolatile material.

F-3. *Softening point of solids.*—Determine the softening point of the solids by the following method which is a slight modification of the method given in National Bureau of Standards Research Paper No. 142, "The Ring and Ball Method of Test for Softening Point of Bituminous Materials, Resins, and Similar Substances," National Bureau of Standards Journal of Research, vol. 4, February 1930, except that only the tapered rings shall be used. Reprints of this paper are for sale by the Superintendent of Documents, Government Printing Office, Washington, D. C.

F-4. *Ash content (based on nonvolatile matter content).*—Weigh accurately from 2 to 5 g of nonvolatile material, obtained in accordance with the method indicated in paragraph F-2, in a tarred porcelain crucible. Burn the combustible matter off slowly and ignite to constant weight. Calculate residue as percentage ash.

F-5. *Free caustic alkali.*—A 10 ml sample of original water-emulsion wax shall be digested in 100 ml of neutral ethyl alcohol (94 percent or higher). Let settle, decant through a filter, and add a few drops of phenolphthalein indicator to the filtrate. If no pink coloration results at this point no free caustic alkali is present. Should a pink color appear, dilute about 10 ml of the original emulsion with 10 ml of distilled water, boil and test the vapors for ammonia. If present, continue boiling until the ammonia is driven off, cool, add 100 ml of neutral ethyl alcohol (94 percent or higher), let settle, decant through a filter, and add a few drops of phenol-



CRESOL U.S.P.

Cresol Compound prepared from Barrett Standard Cresol U.S.P. contains less than 5% Phenol and falls well within the limitations of the Federal Caustic Poisons Act.

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Carefully blended oils ranging in tar acid content from 10% to 75% for manufacture of disinfectants.

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Grades of various distillation ranges depending upon requirements.

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A pure white crystalline product, 40° C. minimum melting point.

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Approximately 25° C. boiling range.

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A coal-tar base for animal dips.

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National Association of Insecticide Disinfectant Manufacturers Incorporated 1914

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AND FURTHER INFORMATION

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2450 CANAL ROAD
CLEVELAND, OHIO

phthalein indicator to the filtrate. No pink discolorations shall result.

F-6. *Volatile solvents.*—Should there appear to be organic volatile solvents present, about 100 ml of the water-emulsion wax shall be steam distilled and the distillate tested for specific gravity in the case of water soluble solvents. The distillate should be water only, with a total of not more than 1 percent allowed for perfume or perfume solvents.

F-7. *Water solubility.* — Dilute a portion of the original water-emulsion wax with water so that the resulting solution will contain 7.5 g of solids per 100 ml. Pipette 2 ml of this solution on to four 9 cm filter papers in such a way that approximately the same surface is covered with solution. Permit the papers to dry at room temperature for 48 hours. After drying, place papers in a covered beaker in 100 ml of distilled water maintained at 20° to 25° C. Allow to stand at this temperature for 24 hours. Decant solution and evaporate decanted liquid. Dry residue at 105° to 110° C. to constant weight. Calculate percentage of water soluble matter on the basis of 0.15 g of solids.

F-8. *Dilution properties.*—Take a portion of original water-emulsion wax and dilute with distilled water to 10 times its original volume. The emulsion shall not break.

F-9. *Physical and performance tests.**

F-9a. *Drying time and film characteristics.*—Take a clear piece of glass plate of a thickness not more than ¼ inch. Flow a portion of the water-emulsion wax over the surface of the glass plate and let dry in a nearly vertical position at a temperature of 20° to 25° C. and a relative humidity of 50 to 65 percent. The film shall dry hard to touch in not more than 10 minutes. The film shall show no signs of whiteness and shall have a lustrous and smooth finish. When the film is viewed through the under side of the glass plate and through transmitted bright daylight, the film shall be clear, free from any particles, and practically colorless.

F-9b. *Settling properties of the emulsion.* — The water-emulsion wax is tested in a centrifuge at a speed of approximately 2,500 R. P. M. for 15 minutes. The emulsion shall retain its original homogeneous form without any settling whatsoever.

F-9c. *Performance tests.*—

F-9c (1). *Spreading properties.*—The water-emulsion wax shall be applied with a lamb's wool applicator or mop over a small area of clean linoleum (linoleum shall be in accordance with Federal Specification LLL-L-351, Linoleum; Battleship, Medium-Weight) or varnish-sealed wood. The water-emulsion shall spread evenly, smoothly, and without streaking.

F-9c (2). *Application.* — Suitable clean pieces of linoleum shall be treated with two coats of the water-emulsion wax, allowing each coat to dry for 2 hours at normal room temperature. Note lustre, hardness, tackiness, and flexibility of the film. The flexibility shall be detemined at or above 20° C. by bending the piece of linoleum with the treated surface on the outside, over a bar or mandrel 2 to 3 inches in diameter, through an arc of 180°. The film shall not crack.

F-9c (3). *Water resistance.*—Two coats of water-emulsion wax shall be applied to linoleum in accordance with the method described in paragraph F-9c (2). Allow the second coat to dry for 48 hours at normal room temperature. After drying, immerse half the piece of linoleum in water at a temperature of about 20° C. and allow to remain for 2 hours. Remove, shake off excess moisture and allow to dry. The film shall not show any separation from the surface of the linoleum and shall show no signs of whiteness. A light buffing of the dried film shall produce a polished surface.

F-9c (4). *Wash-off properties.*—An aqueous soap solution (1 part of automobile soap—in accordance with Federal Specification P-S-561, Soap; Automobile—and 100 parts of distilled water, by weight) at about 50° C. shall be used as a detergent to determine the "wash-off" properties of a film on linoleum that has been allowed to dry for at least 48 hours. The solution when applied to the surface with a moderate amount of washing, using a soft bristle brush shall cause the removal of the film without powdering or whitening of the surface upon drying.

G. Packaging, Packing, and Marking

G-1. Any special requirements of the individual departments are noted under section H.

G-2. *Packaging.*—Unless otherwise specified, commercial packages are acceptable under this specification.

G-3. *Packing.* — Unless otherwise specified, the subject commodity shall be delivered in standard commercial containers, so constructed as to insure acceptance by common or other carriers, for safe transportation at the lowest rate, to the point of delivery.

G-4. *Marking.*—

G-4a. *Issue packages.*—Each package shall be marked with the name of the material and the name of the manufacturer.

G-4b. *Shipping containers*—Unless otherwise specified, shipping containers shall be marked with the name of the material and the quantity contained therein, as defined by the contract or order under which the shipment is made, the name of the contractor, and the number of the contract or order.

H. Requirements Applicable to Individual Departments

H-1. The following departmental specifications of the issue in effect on date of invitation for bids shall form a part of this specification.

H-1a. *Army.* — War Department specification No. 100-2, Standard Specification for Marking Shipments. War Department Specification No. 3-1, General Specification for Paints and Related Materials. War Department specification 23-54 shall be applicable for export packing. (Copies of such publications may be obtained by prospective bidders, without cost, upon application to the distributing agency indicated in the invitation for bids.)

H-1a (1). *Army purchases.*—Each issue package shall be labeled or otherwise suitably marked to indicate the following:

WAX, WATER-EMULSION, FLOOR

Grade..... Type.....
Order No. .....
Net Contents .....
Fed. Spec. P-W-151.

H-1b. *Navy.* — Navy Department General Specification for Inspection of Materials, copies of which may be obtained without cost upon application to the Bureau of Supplies and Accounts, Navy Department, Washington, D. C.

I. Notes.

I-1. Purchasers should exercise all options offered herein and should specify type required.

I-2. The floor water-emulsion wax, as specified herein, is intended for use on sealed floors and floorings. Type I (regular) is generally used directly. Type II (concentrated) is generally diluted to a 12 percent total solids basis.

I-3. It is believed that this specification adequately describes the characteristics necessary to secure the desired material, and that normally no samples will be necessary prior to award to determine compliance with this specification. If, for any particular purpose, samples with bids are necessary, they should be specifically asked for in the invitation for bids, and the particular purpose to be served by the bid sample should be definitely stated, the specification to apply in all other respects.

* All tests under paragraph F-9 shall be determined on the original water-emulsion wax diluted to a total solids content (nonvolatile matter) of 12 percent.

Sharp & Dohme Net Lower

Report of Sharp & Dohme, Inc., manufacturing chemists, Philadelphia, for the quarter ended June 30, 1937, reveals a net profit of $162,190 after depreciation and federal income taxes, equal to 70 cents a share on cumulative convertible preference stock. This compares with earnings of $203,822, in the corresponding quarter of 1936.

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TECHNICAL NOTES

Disinfectant Tests

From over 1,000 tests, it appears that the suspension method is suited for determining the strength of disinfectants both uniformly and comparatively. In carrying out the tests, the strength of the preparation must be determined which suffices to kill during a period of 2-16 minutes in 2-minute intervals. In each test the limit between survival and death must be recognized, since the experiment would otherwise be of conditional value. For the final determination of disinfectant strength, at least 4, better 5 or 6 single tests are necessary. Even these tests offer substantial evidence only when yielding corroborative results and when both the test series with the weaker and stronger dilution furnish unequivocal evidence. *B. coli* is especially suited as test bacterium, although it is never to be used alone, but always with other bacteria in order to satisfy other biological conditions. R. Hanne. *Pharm. Ztg.* **82,** 464-70 (1937); through Chem. Abs.

◆

Italian Pyrethrum

Not only the pyrethrin content which varies from 0.517 to 0.697 per cent, but also the number of flower heads per kilogram, is of importance in evaluation methods. The harvest should be made when the flowers are mature and perfectly open. The Italian product seems to be equal to the Dalmatian and Japanese flowers. Mario Covello. Riv. ital. essenze, profumi piants offic. **18,** 264-70; through Chem. Abs.

◆

Pyrethrum Drying

Quick drying in the sun of pyrethrum flowers did not affect the pyrethrin content, but prolonged sun and shade drying caused appreciable losses. Artificial drying at temperatures up to 122° F. did not affect the pyrethrin content. At 140° F. there was a small but appreciable loss and the loss increased at higher temperatures. Artificial drying at 120° F. did not affect the color adversely but some discoloration of the rays and receptacles occurred at 140°. Sun drying in clear dry weather gave a fine product, except that the receptacles were rather bleached, but prolonged sun and shade drying, in dull weather, produced very dingy flowers. V. A. Beckley and F. McNaughtan. *E. African Agr. J.* **2,** 327-38 (1937); through Chem. Abs.

◆

Purity of Commercial Derris

Microscopic examination of 19 samples of commercial derris powder showed that 10 were genuine, 3 were mixed with powdered lonchocarpus root and 6 consisted exclusively of lonchocarpus. W. Spoon. *Indische Mercuur* **60,** 307 (1937); through Chem. Abs.

◆

Composition for Windshields

A composition to prevent the accumulation of moisture on glass contains wax, shellac and saponified fatty acids mixed with emulsifiers and water and boiled to a homogeneous mass. R. T. and Emil Ellinger. Hungarian Patent No. 116,064; through Chem. Abs.

◆

Activity of Insecticide Roots

Experiments with 3 genera of insects showed that Javan derris root has 1½-2 times the insecticidal value of South American lonchocarpus root, although there is no appreciable difference in the ether extracts or the rotenone contents. The superiority of derris is apparently due to the presence of other poisonous substances such as deguelin and toxicarol, which have not been found in lonchocarpus. Mixtures of the root powders are readily detected by microscopical examination. The granules of derris starch are invariably small and sharply angular, whereas granules of lonchocarpus starch are considerably larger and smoothly ovoid or globular. W. Spoon, P. A. van der Laan, Clemence M. L. Smulders and A. Diakonoff. *Indische Mercuur* **60,** 259-61, 275-7 (1937); through Chem. Abs.

◆

Mothproofing Composition

A composition which simultaneously cleans and mothproofs such materials as wool, feathers, hair, etc. contains neutral soap such as sodium palmitate, oleate or stearate and a minor proportion of triphenyldichlorobenzylphosphonium chloride. Hermann Stötter and Theodor Hermann. U. S. Patent No. 2,082,188.

◆

Moth Killer

A product for killing moths consists of the reaction material of naphthalene and *o*- or *p*-dichlorobenzene or monochlorobenzene mixed with an odoriferous substance. Franz Ineichen. Swiss Patent No. 186,764; through Chem. Abs.

◆

Furniture Polish

A furniture polish contains 6 per cent ammonia, 3 per cent linseed oil irradiated by sunlight, 21 per cent Vienna chalk and 70 per cent Russian turpentine oil. Istvan Hegedüs. Hungarian Patent No. 116,165; through Chem. Abs.

◆

Fumigant

A fumigant consists of liquefied carbon dioxide containing 3-15 per cent by weight of liquefied methyl bromide. Liquid Carbonic Corporation. Canadian Patent No. 367,353.

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British Insecticide Combine

A big new British insecticide concern has just been registered as a private company under the name Plant Protection, Ltd. Its object is to control the horticultural interests of Imperial Chemical Industries, the great British chemical combine. Cooper, McDougall & Robertson, and Abol. Ltd., and it will become a leading manufacturer of insecticides, fungicides, and allied products. Research work will be carried out at the Imperial Chemical Industries Entomological and Mycological Research Station at Jealott's Hill and at the C.M.R. Field Research Station at Yalding, and no product will be recommended until it has been thoroughly tested at these stations. The directors of the new company are all representatives of either Imperial Chemical Industries or Cooper, McDougall & Robertson. J. G. Nicholson is chairman and T. A. Robertson managing director. There are six ordinary directors. The registered office is at Nobel House, London.

Peru Insecticide Market

There is a growing demand for insecticides in Peru, according to the U. S. Dept. of Commerce, particularly for agricultural use. At present there are few prepared products of this type selling in Peru under brand names. The normal procedure is to import the basic chemicals and mix the finished insecticides at the scene of use. A household insecticide is made locally under the name "Cubex" from a domestic cube root base. It has found a substantial sale in the household market and the makers are now reported to be preparing to bring out an agricultural product.

Parke, Davis Nets $4,338,853

For the six months ending June 30, 1937, Parke, Davis & Co., Detroit, and subsidiaries report a net profit of $4,338,853, equal to 89 cents a share on 4,892,114 no-par shares and comparing with earnings of $4,123,384, or 84 cents a share, for the corresponding period of 1936.

National Association of Insecticide *and* Disinfectant Manufacturers

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MEMBERSHIP

Active Membership

All reputable persons, firms or corporations engaged in or allied with the business of manufacturing or distributing disinfectants, antiseptics, germicides, household insecticides, sanitary supplies, and/or articles coming within the purview of the Federal Insecticide Act of 1910 shall be eligible for Active Membership in the manner prescribed in the By-Laws.

Associate Membership

All reputable persons, firms or corporations engaged in the manufacture or distribution of raw materials, containers, packaging machinery, spraying devices or other articles, or services, normally purchased by Active Members of the Association shall be eligible for Associate Membership, to have and enjoy all the privileges of Active Membership but without the right to vote or hold office.

For further details, communicate with

NATIONAL ASSOCIATION OF INSECTICIDE & DISINFECTANT MANUFACTURERS

John H. Wright, Secretary

122 E. 42nd STREET NEW YORK

Coming!

Here are a few of the titles of feature articles which are scheduled to appear during the next few months in SOAP—

★ **"Laundry Soaps,—Meeting Modern Standards."**

★ **"Who's Buying Insecticides?"**

★ **"Floor Waxes,—What Future?"**

★ **"Liquid Shampoo Manufacture."**

★ **"Your New Product,—What Should It Be?"**

★ **"Cleaners for White Shoes."**

★ **"Sweeping Compounds."**

★ **"What Fly Spray Odor—If Any?"**

★ **"Educating the Disinfectant User."**

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NEWS . . . . . .

Rett Disinfecting Moves

Rett Disinfecting Co., Jersey City, N. J., sanitary supplies, has recently occupied new quarters at 180 Danforth Ave.

Market "Surekil" Insecticide

Magee & Wolfe, 1906 East 11th St., Tulsa, Okla., have recently introduced a new insecticide, "Surekil," recommended for use against roaches, ants and mice.

Cole Chemical Expanding

Cole Chemical Corp. has just acquired 30,000 square feet of space at 37th Ave., and 22nd St., Long Island City. Factory, warehouse and offices have been moved to the new quarters. The company will continue to manufacture a complete line of soaps, disinfectants, waxes, sprays, polishes, cleansers, insecticides, etc. In addition, they will also continue selling acids, ammonia, solvents and chemicals.

Metro Products Moves

Metro Products Co., Atlanta, Ga., building maintenance supplies, has moved its plant and warehouse recently to 57 Ellis St., N. E. In the new quarters the company occupies a four-story reinforced steel and concrete building, giving them 10,000 feet of additional floor space.

Radio Talk on Insects

A radio talk "Man's Fight Against Insects" was delivered over the Columbia Broadcasting System the afternoon of August 7 in the U. S. Dept. of Commerce series of radio programs devoted to important American industries. Included in the talk was considerable popular interest material about the discovery of the insecticidal properties of pyrethrum and derris, as well as a number of accounts of serious insect infestations and methods used to combat them. The speaker estimated the total loss from insects in United States to be three billion dollars a year. It is estimated that the American people spend $200,000,000 a year in the fight against insects.

Offer Floor Wax Bulletins

Franklin Research Co., Philadelphia, has just published two articles dealing with floor maintenance materials. The first, on "Water Emulsion Waxes," points out ways by which the consumer may test the effectiveness of different brands of waxes. The second article gives a complete set of architectural specifications covering methods of finishing all types of floor surfaces. Copies of the articles are available by addressing the company at 5134 Lancaster Ave., Philadelphia.

Macleans Increase Profits

Macleans, Ltd., British pharmaceutical concern specializing in mouth washes, toothpastes, and disinfectants, reports a net profit of $1,331,000 for the year just ended, comparing with $419,500 in the previous year. A twenty per cent dividend has been paid this year, double the payment for the previous year.

Exterminators to Golf Oct. 24

Preparations are reported well under way for the annual convention of the National Association of Exterminators & Fumigators to be held at the Hotel Peabody, Memphis, Tenn., October 25, 26 and 27. A complete advance outline of the program will be issued shortly by Harry Hammond, general chairman of the convention committee. Arthur Murray, chairman of the entertainment committee, and Louis Kotler, local Memphis chairman, have advised that a golf tournament will be conducted for early arrivals at the convention the afternoon of Sunday, October 24. Tuesday evening will be "Pot Pourri Night", featuring a floor show, supplemented by an "Exterminators Amateur Hour". Reservations for the amateur show should be addressed to Louis Gatto, Beaver Falls, Pa.

Patent Suit on Ant Stakes

Following publication in the August, 1937, issue of SOAP of a short news item stating that a new insecticide, termed "Ant Stakes," has recently been introduced by the Chemurgic Corp., Richmond, Calif., a letter was received from the Sentinel Chemical Co., Oakland, Calif., in which the latter firm states that it is suing the Chemurgic Corp. for patent infringement. The product consists of a hollow wooden stake with a small opening near the top making the poisonous insecticide jelly within inaccessible to anything larger than an ant. The letter from D. R. McIvor of the Sentinel Chemical Co. states:

"We wish to call your attention to the item, under the heading 'NEWS,' subtitled 'Ant Stakes, Insecticide' in your issue of August, 1937. You have evidently been misinformed, and we wish to give you the correct information on this product so that you might give the proper and correct impression to your subscribers. The product known as 'Ant Stakes' has been manufactured by the Sentinel Chemical Company, Oakland, California, since April, 1935, and has been marketed under the name, Sentinel Ant Stakes. The Sentinel Chemical Company has enjoyed a very profitable business on this product. However, the patent for this particular product is owned by Mr. D. G. McIvor of 1761 Hopkins Street, Berkeley, California, U. S. Patent Number 2,082,712.

"We wish to advise you that the Chemurgic Corporation, Richmond, California, at the present time is being sued for infringement on Mr. McIvor's patent in the Federal Courts in San Francisco, California. With the above information at hand, we believe that it would be only fair that you direct the proper information regarding Ant Stakes to the trade."

Gaining Steadily in Favor!

Buckingham waxes and polishes are gaining steadily in popularity with buyers. Produced by a trained chemical staff, and backed by 25 years of manufacturing experience in the wax and polish field, they run strictly *uniform* from batch to batch.

Our Mopping Varnish and Floor Seal are proving to be very profitable items. Send for samples and prices. We print and supply your own labels.

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Paste Wax
Dance Wax
White Emulsion Furniture Polish
Floor Seal (Wood Seal)
Mopping Varnish
Bowling Alley Polish and Cleaner

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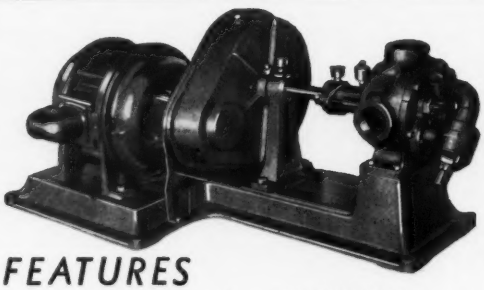

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CEDAR FALLS, IOWA

Cantol Wax Head Dies

H. M. Timolet, president of the Cantol Wax Co., Bloomington, Ind., died early last month. Mr. Timolet was the father-in-law of former Governor McNutt of Indiana, now U. S. High Commissioner to the Philippines, and had been in the wax business for many years.

Levine with Buckingham

S. J. Levine, formerly with S. C. Johnson & Sons, Racine, Wis., has recently joined the sales staff of Buckingham Wax Corp., L. I. City, N. Y., as manager of the new Buckingham retail package division. Mr. Levine has had over fifteen years experience in this field and is well known among wax buyers throughout the country. The entire Buckingham line will be offered in retail packages for the consuming trade. Sales will be made exclusively through jobbers. The retail line is offered in lithographed containers.

Exterminating Baseball Team

An effective advertising plan used by the General Exterminating Co. of Indiana, Indianapolis, includes a baseball team which plays in and about Indianapolis and publicizes the exterminating work of the firm. The team is advertised by blotters and circulars which call attention to the fact that "We strike out all pests and rodents." It is a new publicity stunt started this year by E. E. Edwards of that company. On the uniform of each player is the replica of a rodent. The company is located at 614 North Illinois St., Indianapolis.

End Book Lice Infestation

A serious infestation of book lice in a number of Bronx apartment houses has recently been giving serious concern to the New York Tenement House Department. The department at first ordered the evacuation of all tenants, and a number of families had to move. Their problem was complicated by the fact that their tenancy was refused by other apartment houses who desired to avoid possible infestation themselves. Moving and storage firms also showed a lack of interest in accepting moving jobs from tenants affected. Eventually the problem was solved by the Guarantee Exterminator Co., New York, who quickly cleaned up the infestation.

Chemical Show Dec. 6-11

The Sixteenth Exposition of Chemical Industries is scheduled to open at the Grand Central Palace, New York, December 6, 1937, and to continue through that week to December 11. The exposition will cover three floors of the Palace as in previous years. The student course in chemical engineering will again be presented, with Prof. W. T. Read, Dean of Chemistry, Rutgers University, in charge.

Wants Disinfectant Agency

A concern in Curacao, Netherland West Indies, is interested in establing an agency arrangement for sale of American disinfectants. Interested parties may communicate through the U. S. Bureau of Foreign & Domestic Commerce, Washington, D. C., mentioning inquiry number 3748.

Bulgaria Lowers Extract Duty

Import duties on extracts used in the manufacture of insecticides have been reduced by the Government of Bulgaria until December 31, 1938.

Open New Purex Branch

Purex Corp., Ltd., has just opened a new factory and office at 9300 Compton — Jaboneria Road, South Gate, Calif.

Herman L. Buschman

Arthur H. Hopkins

National Can Executives

Herman L. Buschman and Arthur H. Hopkins, recently elected vice-presidents of the National Can Co., have had a rise to prominence in the can industry, the beginnings of which date back almost twenty years in each case. Mr. Buschman is at present in charge of the manufacturing division of the company and Mr. Hopkins in charge of the equipment division. Mr. Buschman has been with National and its predecessor, Metal Package Corp., since 1920. He joined Metal Package shortly after his graduation from New York University and became successively factory manager of the Maspeth, N. Y., Metal Package plant, general manager of all plants of the firm, and finally vice-president of National. Mr. Hopkins, who has been with National and prior to that with Metal Package for twenty years, came to the concern via the John Boyle Co., which was merged with Metal Package Corp. in 1918. Prior to that, he had been supervisor of the mechanical department of Linen Thread Co. Since joining the can company he has been responsible for the installation of machine shops in the company's various plants.

MECHLING BROS. CAMDEN, N.J. BOSTON, MASS.

SILICATE OF SODA

MECHLING BROS. CHEMICALS

DIVISION OF GENERAL CHEMICAL COMPANY

Push Button Control . . .
with the new HUBER
ELECTRO-PERFECTION CRUTCHER

The greatest advance in crutcher construction in recent years. Electrically driven, two speed and reverse crutcher. Built in 3 sizes:—1500, 2400 and 3200 pounds.

HUBER MACHINE CO.

"Builders of Good Soap Machinery for the Past 45 Years"

265 46th STREET BROOKLYN, N. Y.

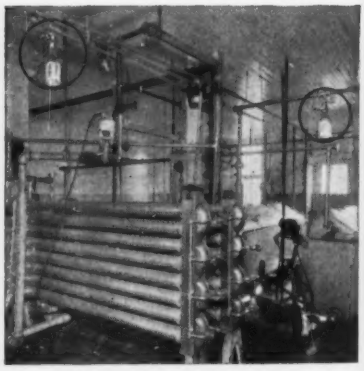
YOUR OWN BRAND Toilet Soaps at Small Cost

For Details Address

GEO. A. SCHMIDT CO.

Manufacturers of SOAPS *of Every Description*

236-238 West North Avenue
Chicago.



STATIONARY INSTALLATION

"FUMERAL" INSTANT DIFFUSER

For the instant diffusion and powerful circulation of various brands of fly sprays, insecticides, deodorants and fumigants.

FUMERAL USERS FROM COAST TO COAST IN VARIOUS INDUSTRIES REPORT SUBSTANTIAL SAVINGS

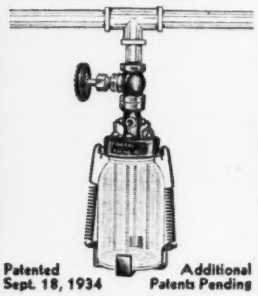
Inexpensive -- Efficient -- Economical

● Fumeral Equipment is Sold by Leading Manufacturers of Insecticides, Deodorants, Disinfectants and Fumigants who also report that FUMERAL Equipment has Increased their Sales.

IT, THEREFORE, WILL PAY YOU TO INVESTIGATE!

FUMERAL COMPANY
RACINE, WIS.
Manufacturers of Fumeral Stationary and Portable Diffusers

FUMERAL PRESSURE SYSTEM CONNECTS TO STEAM OR AIR PRESSURE LINE



Patented Sept. 18, 1934 Additional Patents Pending

ANYONE CAN INSTALL IT

Brenns Ride Across Europe

Earl Brenn, accompanied by his sister Bernice Brenn, respectively the son and daughter of J. L. Brenn, president of the Huntington Laboratories, Inc., Huntington, Ind. and vice-president of the National Association of Insecticide & Disinfectant Manufacturers, recently returned from a two-month bicycle trip through Europe which took them to the British Isles, Scandanavia and Soviet Russia. The trip was taken along with a group from the University of Michigan where both are students. One feature of the trip was an excursion on bicycles 300 miles north of the Arctic Circle. Earl Brenn reports that he left Russia with more money than he took into that country with him, an unusual feat for travelers in the land of the Soviet. It was reported in Huntington that Mr. Brenn, the father, had planned to take the trip with his son and daughter, but had been unable to arrange for a bicycle abroad with pedals large enough to accommodate his feet. Instead, Mr. Brenn, accompanied by Mrs. Brenn, spent the month of July in the mountains of Colorado on a fishing expedition.

New Synthetic Wax

A new wax product, stated to be a substitute for carnauba wax, to be lower in acid number, saponification value, and iodine number than carnauba, has been developed in the laboratories of the Baldwin Laboratories, Inc., Saegertown, Penna. The product ranges in color from gray to white, and in melting points from 75°C. to 88°C. The new wax is stated to be cheaper than carnauba to produce, and suitable for use in wax polishes, waterproofing materials, printing inks, and other products in place of carnauba.

F. C. Theile To Europe

Fred C. Theile, president of P. R. Dreyer Inc., New York perfuming materials house, sailed for Europe on the S. S. *Manhattan*, August 11. Mr. Theile expected to be away for about six weeks, in England and on the continent.

California Tightens Rules on Insecticide Labeling

ELIMINATION of the word "kill" from insecticide labels is the newest requirement of the California Department of Agriculture which has been introducing more and more strict regulations to cover insecticide labeling in recent years. The department prefers use of the modifying phrase "when used as directed" in connection with any use of the word "kills"; or substitution for "kills" of the phrase "for the control of". The change in phrasing is not mandatory immediately, but the department suggests that it be kept in mind when printing new labels.

A statement has just been made by Dr. Alvin J. Cox, chief of the division of chemistry, California Department of Agriculture, amplifying the attitude of the department on this subject as follows:

"For several years we have been attempting correction of insecticide labels and this year for the first time are going over them all. It is difficult for some manufacturers to understand why they should change wording that has been allowed heretofore. However, on that theory we should still be riding in buggies.

"This year in most cases we are asking manufacturers to change the word 'kills' when used in connection with insecticides to 'for the control of', or other similar word or expression as being more nearly in accord with the facts.

"As readily recognized by entomologists, until the last year or two there has been insufficient attention to labels. The selection of a word may be very important on a label. 'Kills' may mean simply that a material will kill an insect if immersed in it or fed it, or it may mean extermination thereof. Extermination is a theory and not a practical possibility. It is our desire to give the public the most comprehensive idea of what the insecticide industry is trying to do and that is to control pests. It is our desire to assist the manufacturers to give to the buying public the clearest possible idea with regard to the insecticide that it is getting. A repellent may not kill pests at all, yet give effective control. A housewife is not interested in the ants in the field but acutely so when they enter the house and the important thing is whether or not a material will control the pest or pests to which reference is made. We are not insisting that the change be made now, but suggest that it be made when printing new labels.

"If a manufacturer desires to modify the use of the word 'kill' such as to say that the material when used as directed will kill all flies in a particular enclosure there should be little objection."

Another communication on labeling requirements has recently been received from Dr. Cox which gives the following label requirements:

Two sample labels for each product should be submitted showing:

(1) The name and address of the registrant, the name or brand of the material, and the statement of ingredients. These requirements must be consistent with the application;

(2) One or more brand names may be registered for the same material, but each variation of composition requires separate registration under a different brand name. When variations in composition are slight some manufacturers designate this by adding to the regular brand name a letter or numeral, for example, "Hi Tree Spray", "Hi Tree Spray A".

(3) Labels for various sized packages must be identical in the essential wording, or registered separately;

(4) Poison labels must conform to the requirements of the

LOWELL SMOOTH RUNNING ELECTRIC SPRAYERS

PRODUCE LARGE VOLUME OF SPRAY
IDEAL FOR ANY INSECTICIDE

Enthusiastic users say this: "Lowell's No. 300 Electric is needed by all insecticide manufacturers and exterminators. High compression combined with Lowell's patented spraying principles gives results."

LOWELL MANUFACTURING CO.
CHICAGO, U. S. A.
Factory: Lowell, Michigan

No. 300 with Time Switch
No. 301 with Toggle Switch

F. & S.

Quality Colors
for
TOILET SOAPS
LIQUID SOAPS
TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.
205 FULTON STREET
NEW YORK, N Y.
Import—Manufacture—Export

SPECIAL PERFUMES FOR SPECIAL SOAPS

Our Research Laboratories have devoted considerable attention to the perfuming of Antiseptic, Sulfur, Superfatted and other Special Soaps

Your inquiries solicited.

COMPAGNIE PARENTO, Inc.
CROTON-ON-HUDSON, N. Y.
NEW YORK CITY DETROIT CHICAGO
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NAPHTHENIC SOAPS
NAPHTHENIC ACID SLUDGES

(Mineral Oil Residues)

"Flag Brand" White Mineral Oils - - - U.S.P. and Technical

Specifications upon request

S. Schwabacher & Co., Inc.
25 Beaver Street New York

Poison Law, administered by the California State Board of Pharmacy, 450 McAllister St., San Francisco;

(5) The label of any material containing lead, fluorine, or arsenic trioxide in any form when sold or recommended for use on any food crop must have the content stated in terms of hundredths of a per cent; and

(6) The guaranteed percentage of organic "intensifiers", when not stated on the label, must be filed with the application for registration of dust or spray materials containing any of these. An organic "intensifier" is understood to be a substance or substances added to petroleum oil to increase the insecticidal value of economic poisons materials for the control of household and garden pests as well as sprays and dusts for leafhoppers.

Where a compound is not to be used as packed, it is recommended that the dosage schedules be stated on labels.

In order to suppress extravagant claims for materials used in pest control it has become necessary to require each registrant to state the pest or pests to be controlled by a given economic poison. Therefore, if this information is not stated on a label, it must be included on the application or separately submitted. The scope of sale under a registration is limited to the acceptable statement of pests to be controlled. A supplemental enumeration of additional pests to be controlled may be submitted from time to time and if acceptable will be added to the statement.

Economic poisons of general use are grouped into classes. In each class is a typical example of a proper required statement. Helpful information in preparing a list of pests to be controlled by a given economic poison is illustrated by the following examples:

Stomach Insecticides

Materials such as lead arsenate, Paris green, calcium arsenate, zinc arsenite, white arsenic, London purple, hellebore, fluorides, and fluosilicates are stomach insecticides. Examples: It will be satisfactory to state for lead arsenates — "For the control of codling moth, canker worms, peach twig borer, and other similar chewing insects". For fluosilicates—"For control of tomato horn worms, corn earworms, diabrotica, beetles and similar insects".

Contact Insecticides

Materials such as miscible oils and oil emulsions, fish oil soaps, carbolic emulsions, resin washes, barium sulphide, sulphur sprays and dusts, and pyrethrum compounds are contact insecticides. (Insecticidal dusts are not to be recommended on caged birds). Examples: It will be satisfactory to state for miscible oils—"For the control of scale insects, canker worms, leaf rollers, European red mites, and other similar insects". For O. X. Insect Spray—"For the control of flies, mosquitoes, roaches, bedbugs, ants, clothes moths, fleas, silverfish, and other similar household insects".

Fumigants

Materials such as gaseous and liquid hydrocyanic acid (prussic acid), fumes of nicotine dusts, carbon disulfide, methyl bromide, and paradichlorobenzene are fumigants. They are effective where they can be used against various insects in enclosed spaces. The effectiveness of paradichlorobenzene and napthalene, for moth control, depends on the use of one pound per six to ten cubic feet of confined space. Example: It will be satisfactory to state for hydrocyanic acid—"Fumigant for the control of insects in confined spaces".

Fungicides

Materials such as Bordeaux mixture, copper sulfate, copper carbonate, other copper compounds, sulfur, lime-sulfur solutions, ammonium polysulfide, and mercury compounds are fungicides. Examples: It will be satisfactory to state for Bordeaux mixtures—"For the control of curly leaf of peaches, brown rot, and other similar fungi". For sulfurs—"For the control of grape mildew and similar mildew fungi". For organic mercury compounds—"For the control of scab in seed potatoes, stripe in barley, seedling blight of corn, and other similar fungi".

(It should be remembered that fungicides are quite selective and the names of the pests given should be the ones for which the best selective control is secured.)

Rodenticides

Materials such as strychnine, carbon disulfide, barium carbonate, phosphorous, and red squill are rodenticides. Example: It will be satisfactory to state for strychnine—"For the control of rodents".

Herbicides

Materials such as sodium arsenite, crude oils, carbon disulfide, iron sulfate, and chlorates, are herbicides. Example: It will be satisfactory to state for sodium arsenite—"For the control of weeds where poisoning of the soil is unobjectionable".

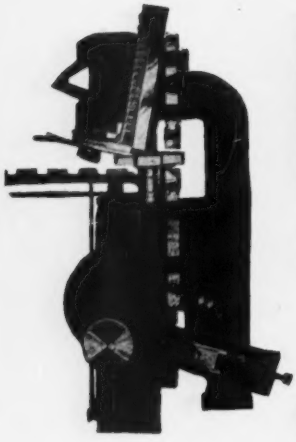
Disinfectants and Germicides

Materials such as phenols, caustic lye, creosote, and sodium hypochlorite are disinfectants. Examples: As applied to any individual organism, it will be satisfactory to state—"For the control of micrococcus and other similar microorganisms"; or, "For the control of streptococcus and certain other similar microorganisms", or "For the control of (stating any desired microorganism) and certain other similar microorganisms".

Sometimes the brand name indicates the pests to be controlled, for example, "O. X. Fly Spray," or "L. M. Argentine Ant Syrup."

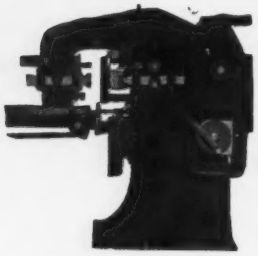
Care should be exercised to include only those pests to be controlled by a given substance. In general fairly specific classifications of pests are desirable. A legend stating "For the control of chewing insects" is in general too broad. For example, under derris (or other rotenone containing materials) it will be acceptable to state "For the control of thrips, aphids, cabbage worms, squash bugs, and harlequin bugs". As a further example phenols are general bacteriacides, but on the other hand nicotine capsules cannot be recommended for the control of worms in poultry without qualification.

Special Offerings of SOAP MACHINERY *Completely Rebuilt!*

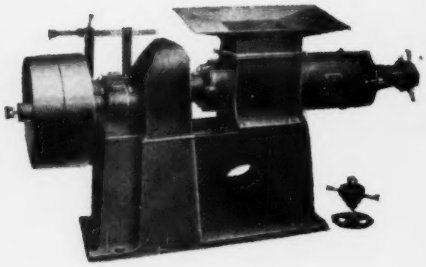


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



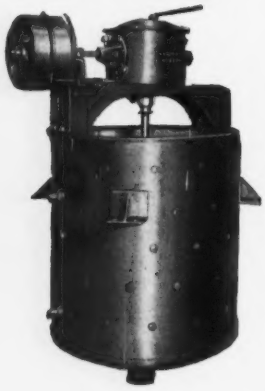
4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.

2 Automatic Power Soap Cutting Tables

NEW CRUTCHERS!



This Newman brand new, all steel steam jacketed soap crutcher. Will crutch any kind of soap. We also build another crutcher especially adapted for laundry soap in addition to other new soap machinery such as frames, cutting tables, etc. Send for complete list.

ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

- H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
- Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
- Ralston Automatic Soap Presses.
- Scouring Soap Presses.
- Empire State, Dopp & Crosby Foot Presses.
- 2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
- H-A 4 and 5 roll Steel Mills.
- H-A Automatic and Hand-Power slabbers.
- Proctor & Schwartz Bar Soap Dryers.
- Blanchard No. 10-A and No. 14 Soap Powder Mills.
- J. H. Day Jaw Soap Crusher.
- H-A 6, 8 and 10 inch Single Screw Plodders.
- Allbright-Nell 10 inch Plodders.
- Filling and Weighing Machine for Flakes, Powders, etc.
- Steel Soap frames, all sizes.
- Steam Jacketed Soap Remelters.
- Automatic Soap Wrapping Machines.
- Glycerin Evaporators, Pumps.
- Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
- Perrin 18 inch Filter Press with Jacketed Plates.
- Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
- Day Grinding and Sifting Machinery.
- Schultz-O'Neill Mills.
- Day Pony Mixers.
- Gardiner Sifter and Mixer.
- Proctor & Schwartz large roll Soap Chip Dryers complete.
- Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
- Day Talcum Powder Mixers.
- All types and sizes—Tanks and Kettles.
- Ralston and H.A. Automatic Cutting Tables.
- Soap Dies for Foot and Automatic Presses.
- Broughton Soap Powder Mixers.
- Williams Crutcher and Pulverizer.
- National Filling and Weighing Machines.

Send us a list of your surplus equipment—
we buy separate units or complete plants.

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